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General Article

SPINAL (EPIDURAL) ANÆSTHESIA IN THE DOMESTIC ANIMALS

A Review of Our Knowledge at the Present Time

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(*Continued from page* 608.)

Epidural Anæsthesia in the Horse

In the horse, as in the ox, one distinguishes between Posterior and Anterior Anæsthesia; in the ox the difference may be one not only of extent of anæsthesia but also of site of injection. In the horse, because the first coccygeal vertebra is often fused with the sacrum, only the intercoccygeal route of injection is available and both types of anæsthesia must be induced by puncture at this site. By Posterior Anæsthesia is understood the varying degrees of desensitisation that may be induced without abolishing control of the hind limbs; Anterior Anæsthesia is a term covering the degrees of epidural block which involve the motor nerves to the hind limbs. In the horse this difference is important. If the power of the hind limbs is to be interfered with, appropriate preparation must be made for control of an excitable patient, especially during the periods of development and recovery. Observations on one of the cases of subarachnoid anæsthesia in the mare reported by Hodgkins[64] amply verify this.

Special Anatomy: The sacrum of the horse is shorter than that of the ox. The five spines sloping upwards and backwards decrease in length from before to behind (fig. 20). With the exception of the first they are, therefore, difficult to palpate, the more so because of the regional development of ligaments and muscles. The first coccygeal vertebra is not infrequently fused with the sacrum with occlusion of the sacro-coccygeal interarcuate space. The lumbo-sacral dural cul-de-sac extends to the level of the second-third sacral segments. The spinal canal slopes backwards and downwards more steeply than in the ox (fig. 20). The first inter-coccygeal interarcual space is smaller than that of the ox.

A.—POSTERIOR ANÆSTHESIA

This is discussed as follows:—

1. Estimation of site.
2. Needles to be used.
3. Mode of injection.
4. Failure to enter the epidural space.
5. Unsatisfactory development of anæsthesia.
6. Amounts of solution.
7. Progress of anæsthesia and Duration.
8. Indications for employment.
9. Accidents and complications.

1. Estimation of Site: The injection is made through the first intercoccygeal interarcual space, to locate which the method of Cuillé and Chelle[60] has been found most useful. An imaginary line is drawn between the hip joints (figs. 17, 18, 19). This intersects the mid-dorsal line at the level of the sacro-coccygeal junction, immediately behind which the spinous process of the first coccygeal vertebra may be felt as a bony eminence. Posterior to this is a depression (x, figs. 17 and 18) representing the space between the first and second coccygeal spines. It is into this depression that the needle is passed. McLeod and Frank[13] recommend the

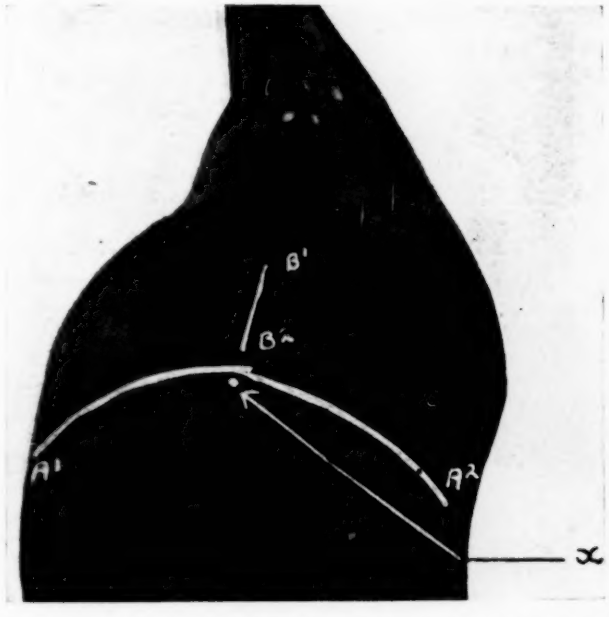

Fig. 17.—The Surface Markings for Location of Site of Injection.
A^1—A^2=line connecting hip joints.
B^1—B^2=position of summits of sacral spines.
x=site of injection, *i.e.*, depression between 1st and 2nd coccygeal spines.
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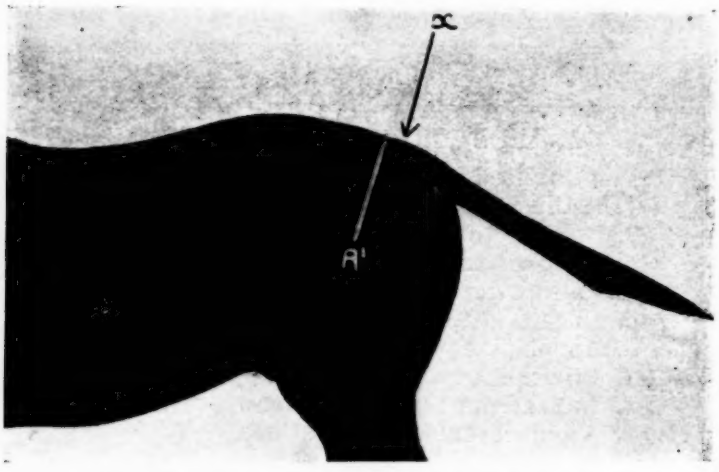

Fig. 18.—The Surface Markings for Location of Site of Injection.

A^1=line connecting hip joints. Note that this cuts the upper contour of animal at right angles.

x=site of injection; arrow depicts the direction in which needle is to be inserted.

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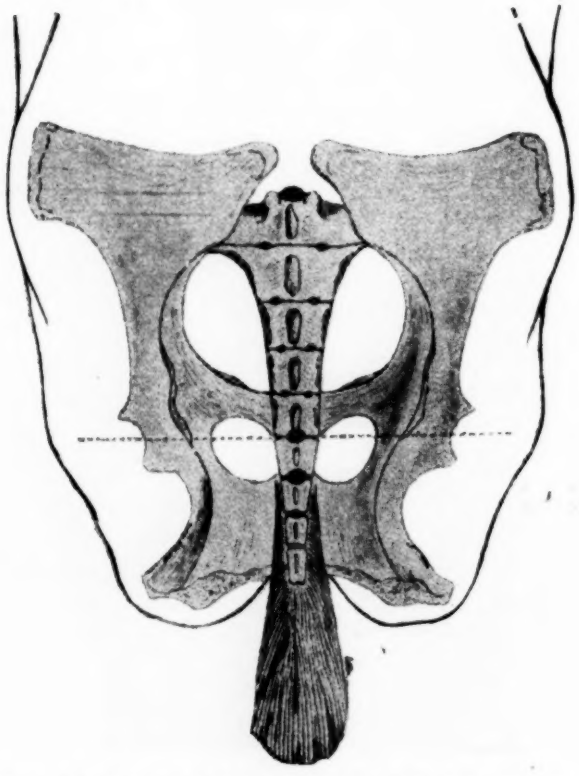

Fig. 19.—Schematic drawing of Pelvic Girdle in relation to Contour of the Animal.

Note.—A transverse line passing through the hip joints cuts the mid-line at the level of the sacro-coccygeal space. The injection is made through the first intercoccygeal space depicted in the figure a little further back.

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operator to palpate the contour of the "croup" backwards and downwards as far as the first obvious depression between two bony spines and state that "counting the spines from the first sacral backwards enables one to recognise the first intercoccygeal space with certainty."

The writer has found difficulty in estimating this site, particularly in heavy draught horses. A combination of both the above methods is recommended.

2. Needles to be Used: The Equine Coccygeal Epidural needle is similar in size and design to the corresponding needle for bovine work (see this journal, p. 601).

3. Mode of Injection.—An area of skin is clipped or shaved and treated with ether and spirit. The control of the patient depends on its temperament, a twitch and a sideline being applied if deemed necessary. In the young foal neither need be used, whereas in the intractable thoroughbred injection may be found impossible. A little local anæsthetic is injected under the skin. With an assistant holding the tail in the normal position the operator inserts the needle in the mid-line at right-angles to the upper contour of the tail. After this the procedure is quite similar to that in the ox (see this journal, p. 600), except that the canal is usually entered at the greater depth of 4 to 5 cm.

4. Failure to Enter the Epidural Space: The first three factors enumerated under the heading in the ox (see this journal, p. 601), apply to the horse. Failure is more common in the horse since the bony landmarks are not so easily palpated and the coccygeal canal is more deeply situated.

5. Unsatisfactory Development of Anæsthesia: This may depend upon the extraspinal escape of the solution. Cuillé and Chelle[60] believe that the intervertebral foramina are often incompletely shut off and permit leakage

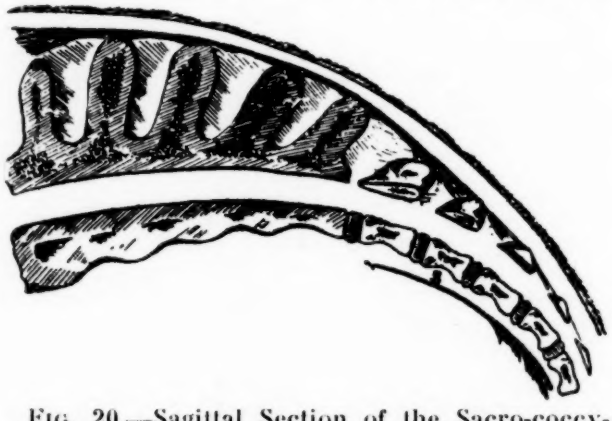

Fig. 20.—Sagittal Section of the Sacro-coccygeal Region of the Spine of the Horse.

Note the sharp backward and downward sweep of the spinal canal.

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of the drug with greater ease than in the ox. The fact that unsatisfactory anæsthesia occurs more frequently in larger patients lends support to the view. Again, the increased downward-backward slope of the spinal canal at this level as compared with the ox retards the forward-percolation of anæsthetising solutions. Finally, because the landmarks are less easy to determine than in the ox, it is reasonable to attribute a proportion of unsatisfactory injections to this fact.

6. Amounts of Solution are as follows:—

A.—*Anæsthetising the Tail for "Docking."*

Foal 4 c.c.; adult 12 c.c.

B.—*"Obstetrical" Anæsthesia.*

25 c.c. upwards according to the size of the patient.

The various recommendations are tabulated for comparison. The writer is indebted to Mr. Stinson, of Appleby, for forwarding his figures and permitting their inclusion.

Table IV

The Doses recommended by Different Writers for Posterior Anæsthesia in the Horse

Authority. (Reference indicated.)	Operations (Dose in c.c.).		Solutions Used.
	Amputation Tail.	Obstetrics.	
McLeod & Frank[13]	Adult. 10–15	30–40	"Procaine," 1 per cent.
Cuillé & Chelle[60]	—	Not exceeding 20	Novocaine 2 per cent. plus Adrenalin and Sodii Bicarb.
Meyer[66] ...	—	Up to 40	Tutocaine, 1 per cent.
Stinson (Private communication)	Foals 3–4 / Adult 12–20	Pony 25 Larger, 30, 35, 40	"Parsetic."

Scott (Pontefract) writes (private communication), "after extensive trials of the epidural method for 'docking,' I have gone back to three 'local' injections above the site of amputation."

McLeod and Frank[13] experimented with coloured agar and found that 10 c.c. anæsthetised the tail and 40 c.c. blocked the nerves to the level of the fourth lumbar. Their final recommendations are tabulated above.

Scott of Pontefract (private communication) using 1 per cent. Planocaine (a trade name for Procaine and prepared by May and Baker, London) injects 5 c.c. with, if necessary, a second 5 c.c. for obstetrical work in the mare. When employing the method for "docking," Scott used to inject 2 c.c. in the foal and 5 c.c. in the adult (planocaine).

7. The Progress of Anæsthesia and Duration is similar to that in cattle being complete in 20 minutes and lasting for about one hour.

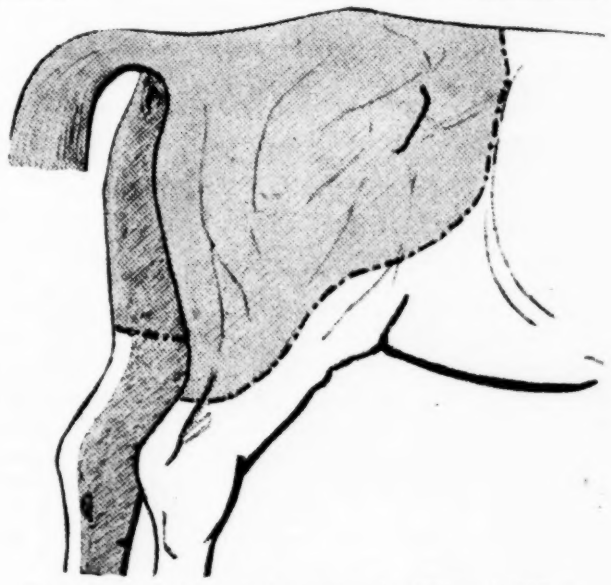

Fig. 21.—Epidural Anæsthesia (Horse) (20 c.c. solution).
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8. Indications for the Use of Posterior Anæsthesia: These are less numerous than in the ox. The technical difficulties of injection in some subjects may even necessitate the use of a general anæsthetic. The possibility of an overdose leading to the necessity of casting the subject is a further bar to frequent use. Nevertheless, there remain the following indications:

A.—Amputation and cauterisation of the tail in the foal.

B.—Obstetrical manipulations in the mare are simplified without the worry of the administration of chloroform by amateur assistants and the partial recoveries from such anæsthesia during delivery. Violent expulsive efforts are controlled but uterine contractions are not obliterated.

C.—As in cattle, ovariotomy may be carried out with facility. For this operation a preliminary dose of chloral is advisable because the ovarian nerve supply is not blocked.

D.—Surgical operations on the tail, anus, rectum, vulva, vagina, and cervix can be carried out expeditiously. The complete relaxation of the parts is a great aid to operative facility.

E.—Meyer[66] recommends the method for intestinal lavage in cases of "colic": the absence of "straining" enables large quantities of fluid to be injected far up the bowel. Meyer injects 10 to 15 c.c. solution and claims to have introduced 13 gallons of water per rectum.

9. Accidents and Complications Associated with Posterior Anæsthesia: (*a*) Breakage of the needle may occur, particularly in the restive animal.

(*b*) Injury to the patient is possible if a too extensive anæsthesia is induced and control of the hind limbs partially or totally abolished.

For this reason hobbles or other equipment should be available; if danger threatens the patient may be put down and kept down until co-ordination is re-established.

B.—ANTERIOR ANÆSTHESIA

As mentioned, this anæsthesia temporarily abolishes control of the hind limbs. The patient fights against the disability, especially during the periods of onset and recovery. Special precautions must, therefore, be taken. This, and the fact that supervision is necessary until the effects of anæsthesia are past, constitute obstacles to its employment in the field when the use of general anæsthetics will effect the same result with great saving of time. On the other hand, a comparatively safe mode of anæsthesia, such as epidural, for prolonged intra-abdominal or inguinal operations may be found to have a place in equine surgery in central hospitals. Those occasional instances of chloroform poisoning and the inevitable worry attending the administration of general anæsthetics are avoided.

If spinal anæsthesia is to be adopted, chloral should be given, preferably by stomach tube or at least in a considerable quantity of fluid, the animal cast and the injection made in the usual way. An intra-muscular injection of 10 c.c. of adrenalin solution (1/1000) should be given. During the onset of the anæsthesia change the side upon which the patient is lying to induce bi-lateral nerve blockage.

For operation on the posterior abdomen and hind limbs a dose of 50 to 60 c.c. should be injected.

Epidural Anæsthesia in the Sheep

The epidural space in the sheep is entered through the lumbo-sacral interarcual space.

1. Estimation of Site: The summits of the wings of the iliæ are palpated and joined with an imaginary transverse line at the point of intersection with the mid-dorsal line. The lumbo-sacral depression between the spine of the last lumbar vertebra and the sacral crest can be easily located.

2. Needles: The Ovine Lumbar Epidural needle is identical with the Bovine Coccygeal Epidural needle.

3. Procedure: The injection is best carried out with the patient standing. The wool is clipped away at the site of puncture and the skin treated in the usual manner. The needle is passed in at right angles to the surface and at a depth of about 5 cm. pierces the interarcuate ligament. A distinct sensation of perforation is imparted to the hand of the operator. The needle should not be inserted further, since puncture of the dural cul-de-sac or injury to nerve roots may result. Before making the injection, tests similar to those outlined under Lumbo-sacral Anæsthesia in the Calf should be performed to make sure that the needle has not entered the subarachnoid space.

Muir[72] performs the injection through the sacro-coccygeal space. He writes: "A depression is found between the vertebral joints at the base of the tail" and a hypodermic needle of a not too large calibre is inserted into the epidural space. He recommends a dose of 4 c.c. (of Parsetic) which produces an anæsthesia which lasts for several hours.

The present writer has tried the method and demonstrated it at Leeds.[73] Provided the patient is of a reasonably large breed, no difficulty should be experienced in performing the operation, and the resultant anæsthesia is quite satisfactory.

4. Amounts of Solution: The writer's experience is limited to cases (parturition, everted uterus, prolapsed rectum) in ewes of the Cheviot type. In each instance a satisfactory pelvic anæsthesia was obtained with an injection of 8 c.c. of Waite's solution.

5. Indications: (*a*) In all obstetrical interventions in which the characteristic vigorous expulsive efforts are a hindrance or danger Epidural Anæsthesia will prove very helpful. The facility with which the fœtus can be manipulated is greatly increased and the distress to the patient minimised.

(*b*) Eversion of the womb is reduced more readily. The precautions as to dosage discussed in the cow do not appear to be necessary in the ewe.

(*c*) Prolapse of the rectum or vagina can be dealt with painlessly and with greater ease.

(*d*) Post-partum "straining" can be temporarily relieved, promoting a reduction of congestion and inflammation.

Epidural Anæsthesia in the Hog

This will be discussed as follows:—

1. Regional Anatomy and Estimation of Site.
2. Needles to be used.
3. Procedure.
4. Amount to be injected.
5. Indications.

1. Regional Anatomy and Estimation of Site: The injection is made through the lumbo-sacral space. To locate this an imaginary line is drawn between the summit of the wings of the iliæ. A little behind the point where this intersects the mid-dorsal line the depression may be felt. This is not easy to palpate in the fat or coarse-skinned types. At the best, firm digital pressure is needed to locate the spot.

2. Needles to be Used: The so-called Porcine Lumbar Epidural needle has the following specification: lengths, 14 and 12 cm.; internal diameter, 1·056 mm.; external diameter, 1·650 mm.

3. Procedure: Control of the animal is naturally difficult and in some instances may be impossible. The animal should be held by the ears alongside a wall or partition, with or without a noose on the upper jaw. An assistant by pressure near the hip keeps the patient against the partition. The operator, standing either to one side or behind, prepares the skin in the usual manner, locates the site as above and passes the needle downwards at right angles to the dorsal plane. As the interarcual ligament is pierced and the epidural space is entered a distinct sensation of perforation is imparted to the hand. There is therefore little risk of propelling the needle far enough to impale nerve roots or perforate the dural cul-de-sac.

4. Amounts of Solution to be Injected: For so-called "Obstetrical Anæsthesia" the writer has injected 8 to 12 c.c. of solution into several small sows of the "middle-white" type. Frank recommends the use of 1 c.c. (2 per cent. Procaine) per 10 lb. body weight and this appears to be a good guide.

5. Indications: (*a*) In dystokia in small sows or when obstetrical manipulations are otherwise difficult, the use of epidural anæsthesia is helpful. The nerve supply to the uterus should not be interfered with, otherwise the fœtus in question will slip back into an uncontracted womb and possibly pass out of reach. Small doses therefore should be used until experience has been gained.

(*b*) Other operations in which the injection may be of assistance are those concerning monorchidism, hernia, scirrhous cord and Cæsarean section.

(*c*) Scott, Pontefract (private communication) uses 2 c.c. of 1 per cent. Planocaine solution for prolapsed rectum in gilts or sows.

It is apparent that in pigs there is a very limited field. The writer considers familiarity with the technique worth while because of the occasional help afforded in parturition cases.

Epidural Anæsthesia in the Goat

Injections in the goat may be made through the sacro-coccygeal or the lumbo-sacral space.

The *regional anatomy* is analogous to that in the ox.

The amount of anæsthetic should be about one quarter of the corresponding doses in cattle. Four c.c. suffice for "posterior" anæsthesia. Frank remarks that 10 c.c. of a 2 per cent. solution induced the desired anæsthesia for operating upon monorchid goats.

The infrequency of goats as patients and the corresponding rarity of conditions calling for spinal anæsthesia accounts for the paucity of literature on the subject in this animal.

. . . . .

Scott of Pontefract (private communication) has abandoned the use of epidural block in cases of everted uterus in the cow. He writes: "I have abandoned it as, by suspension and the use of the valise, this procedure is now relatively simple without it and one avoids that post-operative flaccidity of the vagina."

. . . . .

References.—A complete list of references will appear at the end of the concluding portion of this paper.

(*To be concluded.*)

Clinical Communication

NOTES ON THE TREATMENT OF BRITISH BOVINE RED-WATER

A. R. SMYTHE, F.R.C.V.S., D.V.S.M.,
Falmouth

In many of the protozoan diseases affecting the bloodstream of the larger animals, and mainly as the result of experimental therapeutics, specifics have been found capable of modifying or checking the course of the disease. In the instance of British bovine red-water, however, the discovery of such an agent has not been published, although some attempts have been made to achieve this end. The best-known work in this connection is that accomplished by the late Sir Stewart Stockman in conjunction with Gibbings; they suggested the use of potassium antimony tartrate administered by the intravenous route. The dose used was two ounces of a 2 per cent. solution, and although this method of treatment has had its vogue, it may be stated that it has never achieved a wide popularity. When one considers the pharmacology of the drug in its relation to the circulatory system, and further, recalls the work of Hornby in connection with its toxic action on the liver cells, one does not feel disposed to venture with a substance which is most certainly contra-indicated. Sight must not be lost of the facts that, in this disease, the liver is overburdened with the products of disintegration of red blood corpuscles, and the heart seriously impaired by a faulty composition of the blood or by a degenerating myocardium. In those few cases in which the above method has been adopted, the results have been by no means spectacular and no claim to specificity has been established. An oral method of administration has been adopted by some practitioners, but once again, experience leads one to think that the method is undesirable.

Trypan blue, a toluidine-naphthol dyestuff, is the oldest of the known specifics against piroplasmosis. Its action on the whole is satisfactory. It is given to cattle in doses of 100 c.c.

of the 1 per cent. solution, preferably intramuscularly. If given intravenously the concentration should be 0·25 per cent. only, otherwise the causal organisms may be killed too rapidly and the sudden flooding of the circulation with their products of disintegration may endanger life. Against *P. divergens,* however, its action appears to be useless. Given subcutaneously the preparation produces either a marked induration of the subcutaneous tissues followed by a permanent puckering, or otherwise, abscess formation. An extensive trial of this agent by both routes has shown it to be quite useless in the British form of red-water.

In the *Bulletin de la Société de Pathologic Exotique,* May 14th, 1930, there appeared an article from the pen of Sir A. Theiler, on a drug, then new, for the treatment of the various piroplasmosis. This agent, known as Piroblue, consists of a substance similar to trypan blue, in combination with bile acids. The combination is said to alter the surface tension of the fluid into which it is introduced and to possess a lower toxicity towards the animal and a reinforced one towards the parasite. So far as the Cornish form of bovine piroplasmosis is concerned, experience has not shown that the claims are justified. Given intravenously to cattle in a dosage of 100 c.c. of a 2 per cent solution, the drug appears to have no effect in influencing the course of the disease, and one may have the mortification of seeing cattle, after receiving one or several intravenous injections of this agent, die about the fourth or fifth day from a profound anæmia, without complications, and with the urine still deeply pigmented with the products of dissolution of red blood corpuscles.

The prestige of Quinine lies in its well-known action in malaria in human beings and possibly for this reason it has been advocated in piroplasmosis in cattle. Quinine hydrobromide, injected intravenously, has been used in some countries in protozoan blood infections with beneficial results, and for this reason it was decided to try it out in the British form of bovine red-water. The dosage used ranged from 30 to 40 grains, dissolved in a suitable quantity of water. No immediate effects have been noted from the smaller dosage, but 45 grains has been observed to bring severely affected cattle to their knees with symptoms pointing to vertigo. Such symptoms, however, have been transient in nature. The conclusion reached, after an extensive trial of this drug, is that it has no claim whatever as a specific in red-water, neither does it shorten the course of the disease. One is left, however, with the impression that the animal may derive some benefit from its use: possibly, its general systemic action accounts for this.

Preparations containing bismuth in a soluble form have been widely recommended for use in some of the Continental forms of piroplasmosis. This method was given a trial, but owing to the first few cases being unfortunate in their severity, and lack of response to this line of medication, it was not persisted in. It is recognised now that the dose administered may have been insufficient.

Some years ago, the attention of the manager of the Veterinary Department of Bayer Products, Ltd., was drawn to the need of a suitable agent for use in the British type of red-water. By courtesy of this firm, facilities were made available for the trial of a new agent, known as Acaprin. This product occurs as a light yellow, soluble powder. [The information afforded is that it is an urea derivative, synthetically prepared by Schönhöfer and Henecka and is an "N N"—(Bismethyl—quinolylium — methosulphate — 6) — urea, the curative effect of which was detected by Kikuth in the model experiment of the piroplasmosis of the dog, while its pharmacological research was carried out by Hecht. Orally, in rabbits 0·2 g. per kg. is lethal, whilst 0·1 g. per kg., given on six consecutive days, is tolerated by the animal, without causing injury to the general bodily condition, body-weight or kidneys. A transient slight decrease in the erythrocyte count does occur. It does not discolour the tissues, nor give rise to irritation when injected muscularly. Oral treatment is effective, not only in acute infections, which can be relatively easily influenced, but also in the chronic forms which are very resistant to medication. In cattle, the remedy has proved especially beneficial in babesioses, this being the case both in babesia and babesiella. When the course of the disease has been benign, cures have been obtained with doses of 0·05 g. per animal, but these small doses have entirely failed in severe cases. They are also generally inadvisable, as the curative effect displays itself only very slowly. On the other hand, large doses of at least 0·3 g. or, better still, 0·6 to 0·75 g. per animal, have given very satisfactory results. According to the opinion of many research workers, Acaprin is vastly superior to trypan blue and also to trypaflavine. It is, however, possible that even doses of 0·3 g. may give rise to toxic effects, which, ten to 15 minutes after injection, display themselves in the form of a condition of fear, foaming at the mouth, restlessness, lying down, dyspnœic respiration, muscular tremor, defæcation and stupor.]

It will be noted that Acaprin may be administered subcutaneously or intramuscularly. It is definitely a toxic substance with a wide discrepancy in dosage according to the route

of administration. Thus, in dogs, the lethal dose by intramuscular injection is 3 g. per kg. body-weight, and on oral administration, 300 g. Intramuscular injections are free of undesirable local effects, and do not give rise to irritation or induration.

In the cases under review all treatment has been by the intramuscular route into the muscles of the neck or shoulder.

Early in 1932, supplies of Acaprin became available, but owing to lack of knowledge as to dosage, the results were not very satisfactory. At that time, consecutive cases were injected with 1 c.c. of a 5 per cent. solution (·05 g.) and a review of such a series did not give reason for much satisfaction.

Later in the year, Messrs. Bayer suggested that the dose should be doubled and this dosage was adopted. Although one rather gathered the impression that the course of the disease in isolated animals was less severe, nothing of an outstanding nature could be claimed for this method of treatment. One could not conclude from any evidence afforded, that the course or severity of the disease was different from that which would have accompanied the usual medicinal lines of treatment. In occasional cases, the urine cleared, to be followed in a few hours by relapse accompanied by the typical red-water urine.

The following season, 1933, the dose of Acaprin was increased to 6 c.c. of a 5 per cent. solution. Following the introduction of this dosage, the results became somewhat striking. Early cases of red-water, showing the typical symptoms, and with the usual temperature elevation to the region of 105 to 107°F., yielded to the treatment within 30 hours, in that the temperature became normal and the urine clear of abnormal pigmentation.

Red-water is in some respects a difficult disease in which to assess the value of a specific. Normally, with medicinal treatment, severely affected animals may speedily recover, whilst other beasts, especially milch cows, of the heavy yielding type, decline to respond and, escaping the many complications which may ensue, usually succumb, about the fourth or fifth day, to a profound anæmia, the urine remaining deeply pigmented at the time of death. For these reasons, it is very unwise to express any opinion on the specificity of any drug until a large range of animals has been treated.

Acaprin has been used on every animal treated over a period of two seasons and there appears to be little doubt that, in a very large percentage of these cases, one has been justified in predicting that the temperature will have resumed its proper level and that the urine will have assumed its normal colour about the 30th hour, following the injection of Acaprin. Such remarks must be confined to early cases not confused by home doctoring. Unfortunately, a small percentage of cases remains which do not respond to the treatment in the dosage stated; neither do these cases appear to respond to a second injection of the same strength, administered 24 hours later. One case may be cited—that of a large Devon milch cow, seen early, and which received two doses of 6 c.c. 5 per cent. solution Acaprin at intervals of 24 hours. This cow died from a pure anæmia without complications, on the fourth day. It is suggested that the dosage was not sufficient in this case and probably, in cattle of heavy body-weight, the percentage concentration in the bloodstream is insufficient to destroy the parasite. Messrs. Bayer appear to recognise this fact, for in their more recent literature the dosage recommended for cattle is 1 c.c. per cwt. body-weight of the 5 per cent. solution, either subcutaneously or intramuscularly, but not intravenously. In severe cases the Acaprin injection is repeated, if necessary, after 24 hours, the dose being the same as for the first injection.

In the considerable number of animals treated to date with 6 c.c. to 9 c.c., the appearance of the toxic symptoms which have been indicated above, has been doubtfully observed in only one case. Those adopting this line of treatment will reduce the usual medicinal treatment to a minimum; obviously some measures of elimination are essential in a disease with the symptomatology of bovine piroplasmosis.

R.A.V.C. GOLFING SOCIETY MEETING

Lieut.-Colonel G. Conder, with a score of 89+87=176, won the 36 holes, Challenge Cup, at the Meeting of the R.A.V.C. Golfing Society held on the Course of the North Hants Golf Club, Fleet, on May 22nd and 23rd.

Other prize-winners were:—

Founder's Cup.—Lieut.-Colonel F. D. Hunt, 91—15=76.

Conder Cup (Eclectic).—Major C. T. R. Lawrence, 68.

Captain's Prize.—Lieut.-Colonel F. D. Hunt (13), 1 down.

Bogey Foursomes.—Lieut.-Colonel F. D. Hunt and Lieut.-Colonel F. C. Stratton, 2 down.

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"AN UNUSUAL BEAST"

Such is the description justifiably given to the subject of a letter in *The Meat Trades Journal*—a three-year-old Norfolk-fed ox—which, while in perfect health and condition at the time of slaughter, was subsequently found have "all its internal organs reversed, entrails included" in respect of the side on which they were placed. "The kidneys and such," proceeds the writer, "although perfectly normal, were also wrongly placed, so that the close kidney knob was on the open side. Our inspector says that, in his experience, he has seen nothing like it; neither have I, in my 57 years as a butcher."

N.V.M.A. Congress at Belfast, July 29th to August 2nd, 1935

PROGRAMME

Sunday,	July 28th,	*8 p.m.*—"At Home," North of Ireland V.M.A. (Grand Central Hotel).
Monday,	29th,	*9.30 a.m.*—Opening of the Congress (Civic and Academic Reception). (Queen's University.)
Monday,	29th,	*10.30 a.m.*—Opening of Exhibition of Surgical Instruments, Drugs, etc., by the President. (Examination Hall, Queen's University.)
Monday,	29th,	*11 a.m.*—Paper: "Red-water in Cattle." (Physics Lecture Theatre.)
Monday,	29th,	*2 p.m.*—Short Tour to Stormont, Mount Stewart and the Ards Peninsula ('Buses leave College Square).
Monday,	29th,	*3 p.m.*—Visit to City Abattoir.
Monday,	29th,	*9 p.m.*—Civic Reception (City Hall, Belfast).
Tuesday,	30th,	*9.30 a.m.*—Paper: "Coccidiosis in Bovines and Poultry." (Physics Lecture Theatre.)
Tuesday,	30th,	*11 a.m.*—Paper: "The Position of the Veterinary Surgeon in the Control of Milk, with special reference to Communicable Diseases." (Physics Lecture Theatre.)
Tuesday,	30th,	*2.30 p.m.*—Mourne Tour ('Buses leave College Square).
Tuesday,	30th,	*2.30 p.m.*—Operations and Demonstrations in Mr. J. Ewing Johnston's Infirmary.
Tuesday,	30th,	*9 p.m.*—President's Reception. (Grand Central Hotel).
Wednesday,	31st,	*9.30 a.m.*—Paper: "The Modern School of Thought on the Practical Effect of Certain Unsoundnesses on the Serviceability of Riding Horses." (Physics Lecture Theatre.)
Wednesday,	31st,	*11 a.m.*—Paper: "Parasitic Worms of the Alimentary and Respiratory Tracts of Bovines." (Physics Lecture Theatre.)
Wednesday,	31st,	*1 p.m.*—Congress Photograph.
Wednesday,	31st,	*2.30 p.m.*—Council Meeting. (Queen's University.)
Wednesday,	31st,	*3.30 p.m.*—Annual General Meeting. (Queen's University.)
Wednesday,	31st,	*8 p.m.*—Banquet by H.M. Government, Northern Ireland. (Grand Central Hotel.)
Thursday,	August. 1st,	—Tour of Coast Road, Lunch at Giant's Causeway Hotel, home inland ('Buses leave College Square).
Thursday,	1st,	*9 p.m.*—Dance arranged by Ladies' Benevolent Guild (Carlton Hall).
Friday,	2nd,	*9.30 p.m.*—Paper: "The Work of Veterinary Officers, with special reference to the Production and Inspection of Imported Meat Foods." (Physics Lecture Theatre.)
Friday,	2nd,	*3 p.m.*—Closing Meeting.

SUBJECTS FOR PAPERS

VETERINARY MEDICINE AND SURGERY SECTION

(*President*: *J. Ewing Johnston, Esq.*, M.B.E., J.P., M.R.C.V.S.)
(*Vice-President*: *J. Kernohan, Esq.*, M.R.C.V.S.)
(*Recording Secretary*: *R. Moore, Esq.*, M.R.C.V.S., D.V.S.M.)

1.—"Red-water in Cattle."
By F. T. Harvey, F.R.C.V.S., St. Columb.
Opener: F. W. Hart, M.R.C.V.S., Enniskillen.

2.—"The Modern School of Thought on the Practical Effect of Certain Unsoundnesses on the Serviceability of Riding Horses."
By Major C. H. S. Townsend, O.B.E., M.C., F.R.C.V.S., School of Equitation, Weedon.
Opener: P. J. Howard, M.R.C.V.S., of Ennis, Co. Clare.

EXPERIMENTAL PATHOLOGY SECTION

(*President*: *Professor J. Basil Buxton*, M.A., F.R.C.V.S., D.V.H.)
(*Vice-President*: *Professor T. G. Browne*, M.R.C.V.S.)
(*Recording Secretary*: *P. L. Shanks, Esq.*, B.Sc., M.R.C.V.S.)

1.—"Coccidiosis in Bovines and Poultry."
By H. G. Lamont, M.Sc., M.R.C.V.S., Stormont.
Opener: N. Dobson, B.Sc., M.R.C.V.S., Weybridge.

2.—"Parasitic Worms of the Alimentary and Respiratory Tracts of Bovines."
By Colonel W. A. Wood, C.B.E., M.A., M.R.C.V.S., Cambridge.
Opener: E. L. Taylor, M.R.C.V.S., B.V.Sc., D.V.H., Weybridge.

PUBLIC HEALTH SECTION

(*President*: *F. J. Daly, Esq.*, M.R.C.V.S.)
(*Vice-President*: *Major Brennan DeVine*, M.C., F.R.C.V.S., D.V.S.M.)
(*Recording Secretary*: *A. McLean, Esq.*, M.R.C.V.S., D.V.H.)

1.—"The Position of the Veterinary Surgeon in the Control of Milk with special reference to Communicable Diseases."
By P. F. Dolan, M.R.C.V.S., D.V.S.M., Dublin.
Opener: J. N. Ritchie, B.Sc., M.R.C.V.S., D.V.S.M., Edinburgh.

2.—"The Work of Veterinary Officers, with special reference to the Production and Inspection of Imported Meat Foods."
By Lieut.-Colonel T. Dunlop Young, O.B.E., M.R.C.V.S., D.V.S.M., London.
Opener: Arthur Gofton, F.R.C.V.S., Edinburgh.

HOW TO GET TO BELFAST

By Sea

FROM SCOTLAND.

(1) Lorne-Stranraer (short sea route). Daily Service (Sundays excepted). Stranraer, depart 6.5 a.m.; Larne, arrive 8.15 a.m.; Stranraer, depart 7.5 p.m.; Larne, arrive 9.15 p.m. Bookings: Station Master, Stranraer Harbour.

(2) Glasgow-Belfast direct. Daily (Sundays excepted). Glasgow, depart 9 p.m. (Saturdays, 10.45 p.m.); arrive 8 a.m. Berth extra. Bookings: Burns, Laird, 52, Robertson Street, Glasgow.

(3) Glasgow-Belfast, *via* Ardrossan. Glasgow, depart 10.30 p.m.; arrive 5.45 a.m. (Saturdays and Sundays excepted.
Glasgow Central Station, depart 8.30 a.m.; Ardrossan, depart 9.45 a.m.; Belfast, arrive 1.45 p.m. Berth extra. Bookings: Burns, Laird, 52, Robertson Street, Glasgow.

FROM ENGLAND.

(4) Heysham-Belfast. Daily (Sundays included). Heysham, depart 11.40 p.m.; Sundays, 11.30 p.m.; Belfast, arrive 6.30 a.m. Berth extra. Bookings: District Marine Superintendent, Heysham Harbour.

(5) Liverpool-Belfast. Daily (Sundays excepted). Liverpool, depart 10.15 p.m.; Belfast, arrive 7.30 a.m. Berth extra. Bookings: Belfast S.S. Co., Royal Liver Buildings, Liverpool.

By Air

FROM SCOTLAND.

Glasgow-Belfast. Car leaves 381, Argyle Street, 7.30 a.m.; Renfrew Airport, depart 8 a.m. Daily (Sundays excepted). Return fare, £3 5s. 0d. Bookings: Hillman's Airways, Ltd., c/o Union Transit Co., 381, Argyle Street, Glasgow.
Glasgow-Belfast. Daily (Sundays excepted). Central Station, Glasgow, depart 8.15 a.m.; Renfrew Airport, depart 8.45 a.m.; Belfast Airport, arrive 9.35 a.m. Fare £3 5s. 0d. return. Bookings: Railway Air Services, Glasgow Central Station.

FROM ENGLAND.

London, Birmingham, Manchester, Liverpool, Belfast. Daily (Sundays excepted).
Victoria Station, depart 2.25 p.m.; Croydon, depart 3.10 p.m.; Birmingham, depart 4.5 p.m.; Manchester, depart 4.55 p.m.; Liverpool, depart 5.15 p.m.; Belfast, arrive 6.30 p.m., Aldergrove aerodrome. Fare: London-Belfast, £9 5s. 0d. return; Birmingham-Belfast, £7 return; Manchester-Belfast, £5 return; Liverpool-Belfast, £5 return. Bookings: Railway Air Services, London, Euston Hotel, Seymour Street, N.W.1; Birmingham, New Street Station; Manchester, L.M.S. Offices, 47, Piccadilly; Liverpool, Lime Street Station. Hillman's Airways, Ltd. Daily (Sundays excepted). King's Cross Coaching Station, depart 9 a.m., Essex Airport, depart 10 a.m.; Liverpool, depart 11.20 a.m.; Belfast port, arrive 12.35 p.m. Bookings: Hillman's Airways, Ltd. London: Essex Airport, Stapleford, Nr. Abridge, Essex. Liverpool: H. G. Crosthwaite & Co., Speke Airport.

In addition, special 'planes can be hired.

HOTEL LIST

BELFAST

	Tariff, per Day.		*Garage.*
Grand Central Hotel, 18, Royal Avenue	Single Bedroom 7/6	...	Convenient.
	Double „ 15/–	...	
Midland Station Hotel	Bed and Breakfast, Single ... 11/6	...	Yes.
	„ „ Double, from 15/–		
Royal Avenue Hotel, Royal Avenue	Single Bedroom... ... from 5/6	...	Convenient.
	Double „ ... ... „ 10/–		
Imperial Hotel, Donegal Place	Single Bedroom... ... from 6/–	...	„
	Double „ ... ... „ 12/–		
Union Hotel, Donegal Square South	Single Bedroom... ... ... 5/–	...	„
	Double „ 9/–		
Kensington Hotel, College Square East	Single Bedroom... ... from 5/–	...	„
	Double „ ... ... „ 10/–		
Eglington and Winton, High Street	Single Bedroom... ... from 5/–	...	„
	Double „ ... ... „ 10/–		
*Presbyterian War Memorial Hostel, Howard Street ...	Bed and Breakfast, Single ... 6/6	...	„
	„ „ Double ... 13/–		

*Hostel closes at 11 p.m., unless special arrangements are made.

BANGOR.

Royal Hotel, Bangor	Bed and Breakfast, Single 8/6 to 10/6	...	Yes.
	„ „ Double 17/– to 21/–		

DONAGHADEE.

Imperial Hotel	Single Bedroom... ... ... 5/–	...	„
	Double „ 9/–		
Mount Royal	Single Bedroom 6/–	...	„
	Double „ 12/–		

(Bangor and Donaghadee are seaside resorts conveniently near Belfast.)

Abstracts

[The Study of Human Nutrition: The Outlook To-day. Hopkins, Sir F. G., p.r.s. (1935.) *Brit. Med. J.* 3872. 571-577.]

[*Full Abstract.*]

The lecturer first refers to the fact that the scientific study of nutrition began in earnest in the middle of the last century but that its progress was met by an atmosphere of neglect and disbelief. "The result of the scientific investigator is always under suspicion with the majority when it professes to throw new light on traditional or customary human activities." Many still think that because a race has survived through the ages without much knowledge then science could not improve practice to any significant extent. But, as can be well illustrated from human history, "mere survival of a race is no proof that the majority of its members have ever lived in optimal conditions, or have ever displayed to the full their innate capacities."

Much work has been done upon the quantitative needs of the individual for a supply of energy in his food. All three of the main foods —proteins, fats or carbohydrates—can supply energy for muscular work, and much has been done in an endeavour to decide in what proportions these foodstuffs are best supplied. There is no such thing as a real average energy value of the food required by communities the individuals of which vary considerably in work done, etc., but for administrative guidance it is useful to have such a figure. A study of the available data points to a mean demand for 3,000 calories a day. But although a supply of potential energy in his food, proportionate to the internal and external work done by the body, is the prime need of every individual, the precise nature of the substances in which that energy is supplied is all-important.

Every protein when submitted to the processes of digestion breaks down into rather more than a score of relatively simple substances—α-amino acids. Identical amino-acids are constituents of every protein, whether of animal or of vegetable origin, but any one protein differs from all others in that the actual grouping of these constituents in its molecules is peculiar to itself. One protein may further differ from any other in that their respective molecules contain the various amino-acids in differing relative proportions, whilst a few proteins entirely lack certain of the amino-acids. Thus the protein patterns of our tissues may differ widely from those we consume as food. After digestion the amino-acids derived from the food are re-assembled under the influence of subtle directive agencies into new patterns, those proper to the proteins of the living tissues of the consumer. The pattern of its tissue proteins is a constant characteristic of each species of animal. The food proteins which can be used with the greatest economy in the body are those which contain all the essential amino-acids in such relative proportions as will correspond most nearly with the proportions required by the living tissues of the consumer. These are the proteins of so-called high biological value or "first-class" proteins. In general it is animal proteins which have the highest value.

Until the early part of this century it was widely believed that in a dietary any of the fat present could be replaced by carbohydrate of equal fuel value (or *vice versa*) without affecting the essential adequacy of the diet. We now know that each class among the foodstuffs has functions peculiar to itself. The changes they undergo in the body do not follow independent paths; the paths cross and the changes are interlocked. Fats cannot be properly utilised in the absence of carbohydrates. Animal experiments suggest that, even for normal growth, special forms of fat (the highly unsaturated fats) must be present in the food, and an actual deficiency disease has been recognised in animals as resulting from fat starvation. Ideal dietaries should contain fats and carbohydrates in some due proportion.

Such facts illustrate the complex needs of nutrition and emphasise the circumstance that chemical events in living tissues proceed not independently but each as a part of a whole. Each tissue unit, each living cell, displays a condition of dynamic equilibrium which, even when disturbed, tends always to return to a normal. Each individual chemical reaction within it must progress in close relation, direct or indirect, with all the other reactions. All reactions must be adjusted with due regard to their nature, direction and velocity, and being thus organised, they support the living cell as a dynamic but self-consistent unit. The condition of equilibrium within a living unit which results from such high organisation is naturally highly sensitive to certain forms of disturbances, *e.g.*, a powerful poison, from without. Other molecules, which in a sense are from without, are nevertheless essential to the well-being of the living unit. Thus the internal secretions, each of which is a specific chemical substance, has its own indispensable functions in the body, and their absence leads to dysfunction. Other substances, the vitamins, although not produced in the body, are equally important even in small quantities for the normal progress of active events and they must be supplied in the food. The custom of labelling each vitamin with a letter of the alphabet has proved

convenient, but it will probably not survive long now that our knowledge of their actual chemical nature is fast growing. Vitamin A has recently been isolated in a pure condition and its actual constitution is now known. It is a yellow oil, of which 1/500th of a grain probably suffices the daily needs of a human being. Its absence gives rise to various symptoms associated primarily with degenerative changes in the epithelial cells which line the exposed surfaces of the body. Vitamin C or ascorbic acid has been obtained pure in the form of a white crystalline substance of known constitution. The daily supply of a small animal appears to be about 3 mg. The vitamin is specially, but not exclusively, concerned with maintaining the normal nutrition of the smaller blood vessels. The hæmorrhages which are characteristic of scurvy are due to the degeneration of these. Vitamin D, or calciferol, has also been obtained as a white crystalline compound. It is associated with calcium metabolism. Vitamin E has not yet been isolated. It appears necessary for the development of the testis in the male and for the proper functioning of the placenta in the female. The special influence of vitamin E has been abundantly proved in animal experiments and recent reports from clinics suggest that its administration may prevent the tendency to habitual abortion which is sometimes displayed by women. Three vitamins from the vitamin B complex are dealt with. B_1 deals with the proper maintenance of nerve tissues; it has been isolated and its empirical formula ascertained. Unlike the other vitamins it contains sulphur. B_2 consists of two factors, one essential for growth and the other which prevents animals from developing a skin disease resembling human pellagra. The growth-promoting factor appears to be identical with a yellow fluorescent pigment, known as lactoflavine and present in milk, whose structure has recently been determined. The proof that yet other factors of the vitamin type are necessary for complete nutrition seems imminent. Even a relative deficiency in any one of them may be the cause of subnormal health.

The mineral needs of the body prove to be no less important and scarcely less various than those of the organic nutrients. Some, *e.g.*, calcium, are required in comparatively large quantities, whilst others such as iron, manganese and copper, although essential, are only required in minute amounts. It appears that, in certain cases at least, the minimal need for some one element bears a definite proportion to the minimal need for some other.

Animal experiments have proved to be necessary for the detection of the subtler nutritional needs, and often for the strict proof of suggestions which arise from observation. Owing, however, to the justifiable concentration in such experiments on the individual nutritional factors, they are apt to neglect the circumstance that there may be, and commonly is, complexity in the causation of nutritional failures as displayed by mankind. Thus the fact that vitamin A exerts its influence on the integrity of epithelial surface has been emphasised. Similarly vitamin D has received much attention as contributing to the normal processes of dentition. But evidence has recently been obtained which suggests vitamin A (and vitamin C) plays a part in dentition. Doubtless the different vitamins influence different processes involved in the complex growth of a tooth. Again, for the normal maintenance of skin nutrition much has been heard of the importance of the special factor in the B_2 complex, but it would seem that the influence of A is scarcely less important. Yet again, for years the disease beri-beri has been attributed to the absence of B_1 alone, but here also it would appear that vitamin A may play a part. Finally, although vitamin E has specific relations with the organs of generation, yet loss of fertility also follows prolonged absence of vitamin A. It is quite possible that each vitamin possesses, nevertheless, a strict specificity in its action, but the causation of a pathological phenomenon as observed may well be complex. Every factor in a dietary exercises its functions in union with those of others, and we have yet to learn with more exactness what should be the balance among them in an ideal dietary. Nearly 40 individual substances, it would seem, must be present in a food supply to make it completely adequate.

To convey the essentials of to-day's scientific teaching we have only to insist that fresh green vegetables and fruits are not luxuries but necessities, and that several foodstuffs, and especially cereals artificially fractioned, must not so dominate a diet as to exclude an adequate supply of fresh animal products; if not of flesh, then of the products of the dairy. Examples of disaster following certain government decrees are then given and it is concluded that it is dangerous for authority to control food policy in ignorance.

The growing body has more urgent need for first-class proteins, vitamins, calcium, phosphates, etc., than has the adult body and suffers when supplied with an over-cerealised dietary which is deficient in these. Apart from its necessary and obvious functions in infant feeding, there is abundant evidence that milk is an exceptionally valuable food during the whole period of growth. It would seem, indeed, that apart from merits which would be expected from its known constituents, its high quality proteins, its richness in lime and phosphorus,

and its (less abundant) vitamins, milk must possess some subtle qualities—perhaps due to some special association among the constituents—as a food supporting growth. Not a few writers, face to face with the malnutrition of certain classes of the population in China and Japan, have attributed it, in part at least, to the absence of an adequate supply of milk. It is to be hoped, amid the great attention now being given to milk production, milk prices and milk purity, that inquiries will extend to the question whether the existing methods of its distribution to the general public are the best possible. "On the much-discussed question of the merits and possible demerits of pasteurisation I will only say this: I have myself had reason to review the voluminous literature which bears upon this matter, and somewhat against my preconceptions I have come to the belief that pasteurisation, when properly carried out (an important reservation), affects the nutritional value of milk to no more than a negligible degree." The composition and qualities of milk support the modern claims concerning the complexity of nutritional needs. Of the many factors that recent research has revealed as essential, all or nearly all are contained in it. W. R. W.

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[**Growth and Vitamin A Deficiency.** Orr, J. B., and Richards, M. B. (1934.) *Biochem. J.* **28.** 1259-1273.]

The results recorded in this work indicate that the most important rôle of vitamin A in nutrition lies in its power of preventing the onset of pathological conditions which are the cause of the loss of weight which occurs in vitamin A deficiency. It is usually assumed that vitamin A is a "growth-promoting factor" since, when deprived of it, animals cease to gain weight and finally even lose weight. The weight of an animal is dependent partly on the weight of its skeleton, but to a large extent, also, on the weight of its organs and the amount of fat and muscle carried by the skeleton. Hence an animal's weight varies very readily with its state of health and nutrition. But growth, measured by increase of height or length, on the other hand, depends only on the skeletal development. Obviously it follows that failure to gain weight is not necessarily synonymous with failure to "grow." The present investigation was undertaken to ascertain by measurement of the body-length of the live animal and of the bone-length *post-mortem*, whether growth, as determined by increase of length, really does cease during vitamin A deficiency, which is accompanied by loss of weight. It is found that the growth of rats on a vitamin A-deficient diet continues, although more slowly than for normal animals, even after the animals lose weight. The faster growth of animals receiving adequate vitamin A depends largely on their greater food consumption, and the appetite depends to a large extent on the state of health. If the animal falls into ill-health, even although receiving adequate vitamin A, the appetite fails and the rate of growth slows down. Similarly, in animals deprived of vitamin A the resulting pathological conditions are responsible for diminished appetite and consequent fall in weight and slower growth. The characteristic loss of weight of avitaminosis A is thus a sign of the onset of disease, vitamin A being a disease preventing rather than a growth-promoting factor.

C. G. A.

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[**The Relative Biological Efficiencies of Vitamin A and Carotene in Butter.** Booth, R. G., Kon, S. K., and Gillam, A. E. (1934.) *Biochem. J.* **28.** 2169-2174.]

There is still a great deal of uncertainty concerning the relative biological activities of vitamin A and carotene. Moore has reviewed the findings of various workers and points out the wide variations reported for the minimum doses of the two substances. Moore, by direct comparison of vitamin A concentrates from turbot liver oil with β-carotene, concluded that they were about equally active, a finding supported by Carr and Jewell, comparing vitamin A concentrate with the International Carotene Standard. The present authors calculate the relative values of carotene and vitamin A from the fact that they find the butters from Shorthorn and Guernsey cows have the same vitamin activity towards rats although they contain different proportions of carotene and vitamin A, as determined by the physical methods of spectrophotometric observation. Butters corresponding to summer, autumn and winter feeding were examined and in each case those from the two breeds were found to have equal activity. From the values given, simultaneous equations of the type: 0·78 parts of carotene + 1·10 parts of vitamin A = 2·24 parts of carotene + 0·89 parts of vitamin A, are solved for each of the three seasons, to give a mean result that the vitamin A of butter is six times as potent as carotene in growth-promoting activity.

C. G. A.

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[**Goat Milk Anæmia.** (Trans. title.) Haase, M. (1934.) *Berl. tierärztl. Wschr.* Sept. 7. 595-598.]

Earlier work showed that animals rapidly became ill, lost weight and in a few cases died when fed on a diet composed solely of goat's milk. This was in sharp contrast to the apparent good nutritional qualities of cow's milk fed to control animals. The ill-effect of goat's milk was claimed by various authors to be due to, (1) a high salt content, (2) some

unknown and undetermined damage to the small intestine, (3) a deficiency factor, or (4) the presence of some toxic factors.

Much of the work carried out, however, cannot be strictly compared, as the various workers had utilised different animals for experimental purposes. In particular, work carried out on guinea-pigs could be to a large extent discounted as it was found that although they became ill and anæmic and in some cases died, the ill health was due to the scorbutic process. Beneficial effects were produced by feeding vitamin C and, as is now well known, the guinea-pig is peculiarly susceptible to vitamin C deficiency. All that can be said at the moment is that younger animals are probably more susceptible and that many domesticated animals are prone to a depression of erythropoiesis. None of the theories have so far been proved and many of the discrepancies in the literature are undoubtedly due to the fact that different types of animals have been used for experiment.

J. R. M. I.

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[**A Transmissible Anæmia of Cows.** Dobberstein, J., and Pfening, C. (1934.) *Berl. tierärztl. Wschr.* July 6. 449-452.]

All efforts in the transmission of bovine lymphadenosis (lymphatic leukæmia) by the injection of emulsions of blood, lymph glands, kidneys, etc., from infected animals into young cattle, dogs and mice, have so far failed to produce any positive results. It seems that neither in the blood nor organs of affected animals is there any specific causal micro-organism.

The authors were able to produce a transient and recurrent anæmia in healthy cows by the injection of blood serum from animals taken from districts where bovine leucosis was known to be prevalent. It is suggested that this anæmia is probably an initial stage in the production of a lymphadenosis and that in the natural disease process only certain stages are infectious, which might account for the failure of several other workers to transmit the disease as the material used for transmission may have been taken from the chronic stage.

The anæmia produced occurred between the sixth and eighth day, with a rise in temperature which corresponded with a fall in the red cell count. The anæmia frequently disappeared but later recurred with a simultaneous leucopenia.

J. R. M. I.

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[**Etiology and Therapeutics of a Leukæmic Lymphadenosis of the Bovine.** Schöttler, Fr., and Schöttler, H. (1934.) *Berl. tierärztl. Wschr.* July 2. 497-502. Aug. 3. 513-517.]

Although there are many contradictory statements in the literature, it appears that this disease in the last few years has shown a definite increase in prevalence, apparent from the increase in number of diseased animals which have been condemned in slaughterhouses. The disease has shown a definite tendency to spread throughout Germany. In the opinion of the authors there can be no doubt that the disease is epidemic in nature. A general description is given of the various cellular elements found in normal bovine blood and of the so-called lymphoidocytes or immature lymphocytes which predominate in the blood and the leucosis. A general critique of results of other workers regarding transmission experiments follows.

The authors believe that the disease is infectious but that the ætiological agent responsible is probably not in the nature of a virus but is a living organism of some variety. This agent causes a general stimulation of the stem cell (undifferentiated mesenchyme cell) present in the spleen and lymphatic system in general with a resultant invasion and increase of immature lymphocytic cells into the blood. The question as to at which stage the disease is infectious is left open. Reference should be made to the other abstracts, particularly of the work of Dobberstein and his collaborators (see preceding abstract).

J. R. M. I.

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[**The Blood Picture of Bovine Leucosis.** Pfening, C. (1934.) *Berl. tierärztl. Wschr.* *50.* 580-582. 1 table. (36 refs.)]

Numerous other workers (Knuth and Volkman, du Toit, Dobberstein, etc.) have made studies of the blood picture in lymphadenosis. Considerable differences regarding the percentage of the various cellular elements of the blood have been recorded, although there seems to be a general agreement that there is an increase in the young immature lymphocytes and a concurrent polymorphonuclear leucopenia. A short summary is given of the normal blood values of cows between the ages of three to 15 years, as follows: erythrocytes—6·15 million with a variation from 4·81—8·06; total leucocytes—8,200 with a variation from 5,000—12,000; differential counts show the lymphocytes to have a value of 50 per cent., polymorphs about 43 per cent., monocytes about 7 per cent.

A qualitative and quantitative investigation of the blood of 142 cows from farms in the neighbourhood of Berlin was carried out. The ages varied from three to 12 years. In 55 of these cases an abnormal blood picture was observed which could be divided into the following groups: (1) Anæmia with normal leucocytic picture; (2) Anæmia with concurrent leucopenia; (3) Anæmia with leucæmia; (4)

Leucæmia with normal erythrocyte count. None of these cows in the course of seven months showed any clinical signs of disease.

Between anæmia and leucæmia there appeared to be a definite antagonism. In the presence of anæmia the leucocytes retained their normal values; with increased leucocyte count the erythrocyte count returned to normal, while with great increase in the leucocytes there was a return to an anæmic condition, a phenomenon often observed in severe leucæmia.

The author concludes by stating that, in the light of these results and observations of the pathology of leucosis in the bovine, fowls, and man, there is undoubtedly a relationship between anæmia and leucosis.

The pathogenesis might be explained as follows. The disease begins as an anæmia but is later overrun by a leukæmic condition; in the late stages the process may take the form of neoplastic-like over-growth in various organs, whilst in some cases, there is a secondary anæmia before death.

J. R. M. I.

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[Treatment of Bovine Red-water with Todorit. Yakimoff, W. L., and Swirsky, S. A. (1934.) *Tierärztl. Rdsch. 40.* p. 580.]

The author gives an account of the successful treatment with Todorit of two cases of red-water due to *Babesia bovis*. Both animals exhibited typical symptoms, the first showing marked constitutional disturbance; in the other the disease was in the early stage. The injection of 10 c.c. of the substance was followed by complete recovery in four days in the first case and in two days in the second.

S. J. E.

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[The Treatment of European Red-water in Cattle with Albargin. Yakimoff, W. L., Swirsky, S. A., and Weintraub, A. M. (1935.) *Berl. tierärztl. Wschr. 51.* 9. 130.]

Previous work by Yakimoff *et al.* in Russia showed that a silver preparation named ichthargan was the most efficient drug in the treatment of European red-water (*B. bovis*) in cattle. Ichthargan, however, is of foreign origin, and this article records results of experiments using albargin, which is a standardised silver preparation produced in Leningrad, and contains 18 per cent. silver combined with gelatose. The drug is given intravenously and the dose recommended is 2 to 2½ gms. per head; the concentration of the solution for injection should not exceed 1·5 per cent.

Severe systemic reactions sometimes follow the administration of silver, and the authors, using 30 healthy cattle, noted five reactions when the concentration of the solution was between 2 and 3 per cent. With the exception of one case, however, the symptoms were not alarming and passed off in 30 to 60 minutes. Working on affected animals in the neighbourhood of Leningrad, albargin was tested for its specificity against *B. bovis*, and compared with ichthargan on the following points: (1) action on the course of disease, *e.g.*, fall in temperature, effect on blood parasites and effect on the urine; (2) complications following use of albargin. In all particulars the results of albargin therapy compared favourably with those previously obtained for ichthargan, and complications proved to be few, when proper precautions were observed. The authors, therefore, have confidence in recommending Russian albargin as a specific drug in the treatment of European red-water in cattle.

W. L. S.

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[Immunisation against Anthrax with a Saponified Culture. Hall, G. N., and Ford, J. (1934.) *Vet. J. 90.* 11. 443-454.]

An account is given of experimental work on the use of an anthrax vaccine containing saponin, the effect of the latter being to produce a local inflammatory reaction and so prevent generalisation of the organisms.

The vaccine was prepared from Pasteur's second vaccine, which after prolonged incubation showed nearly 100 per cent. sporulation. A suspension in normal saline containing 1,000 million organisms per c.c. was prepared and to it was added saponin to make the final concentration 2 per cent.

Of 32 sheep injected subcutaneously with 0·25—1 c.c. of this vaccine, all showed a local reaction but all survived; 12 to 15 days later, when injected with 0·02 c.c. of virulent culture, only one died from anthrax. Four unvaccinated sheep succumbed to the same dose of culture.

Six cows were injected subcutaneously behind the shoulder with 0·5 c.c. of the vaccine, and they survived 0·04 c.c. of virulent culture ten days later. All showed extremely severe local reactions.

Fifteen cows received the vaccine subcutaneously in the hairless area under the tail. The local reactions were much less severe, and all proved immune to 0·04 c.c. of virulent culture injected 15 days later.

Twenty goats (eleven pregnant) survived 0·5 to 1 c.c. of the vaccine and only two developed anthrax when injected with 0·02 c.c. culture ten days later. Goats have been shown to be more highly susceptible to anthrax than cattle and sheep.

It is concluded that the vaccine used is safe and efficacious.

E. W. A.

[**Monovular Twins in Sheep and Swine, and Binovular, but Monofollicular Twins in Sheep.** Cohrs, P. (1934.) *Berl. tierärztl. Wschr.* *50.* 39.]

A discussion of the literature and physiology and a few new case records.

It is not often possible to say for certain whether twins have originated from one or two ova. The points of importance to notice in this respect are: (1) the number and situations of corpora lutea; (2) the form of the fœtal membranes, and (3) the identity (appearance and detailed conformation) of the twins in question. Theoretically monovular twins are of the same sex and exactly alike in every respect; they are associated with a single corpus luteum and they share a common amnion, but have separate allantoic membranes. The placental circulatory system may or may not anastomose as between the two embryos.

Binovular twins may appear as monovular twins as determined by the appearance of the membranes, but in this case a scar-like union is present between fused amniotic sacs, whereas there is none such in the case of monovular twins.

The relevant veterinary literature, dealing with equine, bovine, ovine and porcine twins, is reviewed and new cases of monovular twins in a sheep and pig and binovular twins in a sheep are recorded, together with diagrammatic figures, which go far towards making the conditions clear to the reader. These lengthy descriptions cannot be abstracted in limited space.

J. E.

FOOT-AND-MOUTH DISEASE RESEARCH COMMITTEE

Dr. J. Russell Greig, Director of the Moredun Institute, Gilmerton, Midlothian, has been appointed by the Ministry of Agriculture and Fisheries to serve upon the Foot-and-Mouth Disease Research Committee in succession to the late Professor S. H. Gaiger.

* * * * *

IMPERIAL CANCER RESEARCH FUND

It is announced by the executive committee of the Imperial Cancer Research Fund that William Ewart Gye, M.D., EDIN., of the National Institute for Medical Research, Hampstead, will succeed Dr. J. A. Murray, F.R.S., as Director of the Imperial Cancer Research Fund on the latter's retirement at the end of this year.

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TWELFTH INTERNATIONAL VETERINARY CONGRESS

In a letter dated May 16th, the General Secretary of the Twelfth International Veterinary Congress states that it is expected that the proceedings of the Congress will be available about July 1st. The work of printing the proceedings is being done at the Government Printing Office, Washington.

Colonial Report

KENYA COLONY AND PROTECTORATE

Annual Report of the Department of Agriculture for 1933

As would be expected, this report supplies much interesting information for those of our profession engaged in the Colonies, and, indeed, for many of us at home also.

The Department is composed of two branches with a central directorate in charge of the Director of Agriculture. One branch is called the Division of Plant Industry and the other the Division of Animal Industry. Each Division is controlled by a Deputy Director of Agriculture, who in the case of the Animal Industry Division is also designated the Chief Veterinary Officer. The Plant Industry Division includes sections in Agricultural Entomology, Botany, Chemistry, Plant Breeding, Coffee Culture and the Grading and Storing of Agricultural Produce, each being in charge of its own expert officer.

The Animal Industry Division consists of three sections, *viz.*, (*a*) an Administrative and Executive Section, (*b*) a Sub-Division of Veterinary Research, and (*c*) a Division of Animal Husbandry. The Division is in charge of Mr. H. H. Brassey-Edwards, M.R.C.V.S. In the Executive or Field Division there were at the end of the year two senior Veterinary Officers, 12 junior Veterinary Officers and 19 European Stock Inspectors. In the Research Division were the Chief Research Officer (Mr. Daubney, M.SC., M.R.C.V.S.) in charge, three Research Officers, an Entomologist and 17 other European lay officers. The Husbandry Division was in charge of Mr. Jardine, B.SC., N.D.A., N.D.D., who was assisted by four European Instructors. Several retrenchments were made in the staff during the year. The total expenditure of the entire Department for the year was £126,053, of which £65,942 was spent by the Animal Industry Division, and of this, £21,179 went to the Research Sub-Division.

This review deals with the Animal Industry Division only.

The report of the Chief Veterinary Officer covers a vast and varied field of activities and includes accounts of the dairying, pig, sheep and poultry industries, native pasture development, trade conditions, legislative enactments and disease control, and reference will be made here only to the last of these. This section of the report begins with the statement: "The general disease position in the Colony is not satisfactory, in spite of every departmental effort . . . outbreaks of disease in general

are on the increase." This unsatisfactory state is attributed, in part at least, to a reduced revenue consequent on the depressed financial position which the Colony has been experiencing in recent times. [Happily, however, it would seem from the Director of Agriculture's part of the report that the bottom of this depressed state had been passed.]

Rinderpest.—This disease still maintains pride of place among the menacing diseases of the Colony. There were 95 outbreaks recorded during the year. The disease is controlled by quarantine and immunisation; both active and passive immunity are employed according to circumstances. A mobile rinderpest service is used as an adjunct to local services.

East Coast Fever.—This disease has also shown resuscitation and 58 outbreaks were reported from "clean" areas. Dipping operations had to be suspended in some areas on account of depleted grazing consequent on drought, while illicit movement of stock elsewhere contributed to these outbreaks. There are 381 cattle dips in the Colony but these are inadequate for effective tick control.

Contagious Bovine Pleuro-pneumonia.—This is kept in subjection in the settled areas but it is prevalent in some of the native reserves. Where possible it is controlled by quarantine and vaccination.

Rabies.—Rabies has become a serious problem. So far, it is confined chiefly to jackals but cases have occurred in other carnivora and a few in bovines. In affected areas wholesale destruction of potential carriers, by poisoning and trapping, has been carried out.

Sterility.—The increase in dairy farming in recent years has brought this important condition to the fore. All breeds of cattle are subject to it. One form appears to be contagious but the causal agent has not yet been identified. Other factors which are suspected as causing it are nutritional deficiency and genetical influences.

Tick Bionomics.—A tick survey of the Colony has been undertaken by the Veterinary Entomologist and the distribution of the various species is being demarcated with the view of assessing the potential dangers of tick-borne diseases in different areas.

Trypanosomiasis.—Evidence is accumulating that this disease is becoming more widely distributed and a serious menace to grazing areas which once maintained large herds of stock. The most important trypanosome is *T. congolense,* which is highly virulent for cattle and causes serious mortality in infected areas. *T. vivax,* which is also common, causes a more chronic affection. *T. brucei* is comparatively harmless to the larger animals [presumably bovines] but pathogenic for dogs. *T. evansi* has been identified in camels in the Northern Province and in the coastal districts. Tsetse flies are more widely distributed than was previously thought. Measures to control *G. pallidipes,* the most widely distributed species, are to be undertaken.

Other diseases dealt with include anthrax, blackquarter, foot-and-mouth disease, equine lymphangitis, contagious abortion of cattle, swine fever, piroplasmosis, anaplasmosis, colon-bacillosis of calves, hæmorrhagic septicæmia and poultry diseases—all of which are prevalent to a large or small degree in different districts.

When one reads through this part of the report one wonders how such a small staff copes with such a medley of serious diseases. Obviously there is urgent demand for larger personnel and more facilities, if these are to be subdued and exterminated.

Veterinary Research

The report of the Chief Veterinary Research Officer is up to the high standard to which we have become accustomed from Kabete. There also the professional staff is far too small for the work in hand, yet it has coped well with the situation and has met the immediate requirements of the Department in routine diagnosis, preparation of laboratory products and in research of a pressing nature.

On the routine side 6,962 specimens were examined and 1,134,758 doses of various vaccines, sera and other products were prepared during the year. On the research side many problems were investigated, of which the following are worthy of note:—

(a) *The Duration of Immunity to Rinderpest following Vaccination with formalinised-virus.*—It is concluded from the results of an experiment initiated in 1927, that immunity lasts for a period in excess of five years after the injection of a dose of completely inactivated virus followed by a vaccinating dose of active or partly inactivated spleen virus. It is also stated that probably this immunity will persist throughout life, in spite of the fact that in the process of immunisaton very few demonstrable reactions are produced by the virus. Evidence is also given to suggest that a strong immunity to natural contact infection is produced by the use of completely inactivated virus alone but that its duration does not exceed two years.

(b) *Blue-tongue.*—Virus was recovered from three cattle, two of which were affected with nervous symptoms and the other was apparently normal. The virus obtained from these cattle appeared to be of higher virulence for sheep than ordinary strains met with in that species. This finding raises the question, are cattle unsuspected carriers of this sheep disease?

(c) *Horse-sickness.*—Experiments were continued on the neuro-virus of mice as vaccine for

this disease. Results are inconclusive as yet, but are so far encouraging.

(d) *Contagious Bovine Pleuropneumonia.*—Further successful transmissions of this disease by means of intravenous injections of emboli of agar charged with the organism are recorded. The disease has been successfully transmitted also by contact and the incubation period following contact infection is said to be as long as 31 days.

(e) *Paratyphoid Infection of calves.*—It has been established that the organism responsible for this serious calf disease in Kenya is the Dublin type of Salmonella.

(f) *Fowl Typhoid.*—It is stated that reliance cannot be placed on the agglutination test for the detection of immune or carrier birds and therefore the disease cannot be controlled by this means. The use of vaccine consisting of living attenuated organisms gives excellent results as a prophylactic.

(g) *Bacillary White Diarrhœa.*—The occurrence of this disease is recorded in the Colony for the first time.

The Animal Husbandry Division instituted experiments in collaboration with the Rowett Institute of Aberdeen to estimate the direction in which husbandry methods practised in temperate climes need to be modified to suit tropical conditions. Drought and other conditions, unfortunately, impeded this investigation. Much useful work, however, was carried out in native training centres devoted to the improvement of livestock and their products.

W. K.

VETERINARY INSPECTION IN DENBIGH

At a recent meeting of the Denbighshire County Council details were given by Mr. T. Lloyd Williams, of the resolutions passed at a conference (of which he acted as Chairman) between veterinary surgeons in the county and a committee of the County Council, convened to consider a scheme prepared by the Clerk for the administration of the Milk and Dairies Acts and Orders, Diseases of Animals Acts and Orders, and the Tuberculosis Order. Up to the present, he said, the carrying out of these various measures had not been entirely satisfactory. There was almost complete unanimity at the conference, and certain proposals were made which, if put into operation, were likely to be of great benefit to the county generally. Chief among the proposals were that all the veterinary surgeons invited to the conference act as veterinary inspectors under the various Acts and Orders, on the same terms as the existing inspectors, and that Mr. J. H. Wynne, Denbigh, be appointed chief inspector to organise the work and carry out the duties of veterinary officer as detailed in the memorandum. It was proposed that the county's veterinary officers should carry out the services in regard to the accredited producers scheme, which involved the inspection of herds four times a year.

The committee's recommendations were approved.

N.V.M.A. Divisional Reports

NORTH MIDLAND VETERINARY MEDICAL ASSOCIATION*

PRESIDENT'S ADDRESS AT SHEFFIELD

A meeting of the above Division of the N.V.M.A., was held at the King's Head Hotel, Change Alley, Sheffield, on April 10th, with the President, Mr. E. Marrison, in the Chair. There were also present: Messrs. F. Addison, A. D. J. Brennan, T. C. Fletcher, G. Green, R. Hudson, E. G. Johnson, F. C. Scott, H. Thompson, and W. Tweed (Hon. Secretary). The visitors present were Messrs. H. A. Hunt, R. T. H. Massey, G. Rennie and A. Robertson.

Correspondence.—Arising out of the correspondence, a letter was read from the Secretary of the N.V.M.A. inviting an expression of views on the principle of one subscription for membership of the N.V.M.A. and its Divisions. After discussion, it was decided that this Division could carry out its functions more satisfactorily by collecting and retaining its own members' subscriptions than by a combined subscription with the "National."

Election of members to the Council of the N.V.M.A.—It was proposed and seconded that the President and Hon. Secretary serve in this capacity.

It was decided that no delegate be sent to the Royal Sanitary Institute Congress, 1935.

Morbid Specimens and Cases of Interest

Specimens and interesting cases were brought forward by the President, as follows: Abnormal fœtus from a mare; comparison of Hobday's and Reynolds' operation for roaring; treatment of gangrenous mastitis; lactation tetany; non-slip shoe; epistaxis in cow; potato poisoning; Burdizzo castration.

In discussion of the above, Mr. Hudson stated that Reynolds claimed advantages from removal of a piece of the vocal cord. Concerning the three-quarter shoe mentioned as non-slip, he had used it and except during frosty weather it was satisfactory. In regard to the Burdizzo castrating instrument, the results of its use were not always satisfactory, and in such cases the testicles required dissecting from the adhesions.

Mr. G. Rennie mentioned the question of certifying a bull for breeding which had one testicle with a short cord which was known as a crossed testicle. Such bulls often produced bulls similarly affected.

Mr. Scott said that in lactation tetany due to magnesium deficiency he used chloral with

* Received for publication, May 10th, 1935.

very good results. He went on to describe a case of extra-uterine pregnancy where the fœtal membranes had become attached to the abdominal wall. In the use of the Burdizzo he held one handle between his knees and grasped the cord and operated the instrument himself. He mentioned that the cord could be broken when the instrument was closed on it.

Mr. Fletcher described a case in a heifer that had been calved a week when she commenced to strain. There was a slight injury in the vaginal wall but one which normally would cause no concern. Later the vulva and anus became very swollen and bluish in colour. The *os* seemed normal.

Mr. Tweed said that the condition was probably one of malignant œdema and that such cases were often fatal.

Presidential Address

The President now gave his Address from the Chair, in the following terms:—

In the first place, I must apologise for not having had the time at my disposal to provide you with an elaborate scientific address, but I hope you will find it sufficiently interesting to promote a free discussion on present-day veterinary politics.

When our worthy Secretary suggested to me that I had a duty to perform to this, the North Midland Veterinary Medical Association, in particular, and to the veterinary profession in general, and that duty was none other than accepting the office of President of this Association, I must admit I felt very diffident of my ability to follow in the footsteps of my worthy predecessors, to enable me to transact the business and conduct the meetings with the same dignity and acumen as displayed by them.

I thank you most heartily for the honour you have conferred upon me by electing me as your President for the ensuing year, and I can only hope that with your co-operation and the valuable aid that is so freely given by our esteemed Secretary, I shall be assured of a successful issue from all the anxieties that one must feel are connected with such an important office.

I believe it is customary for the newly-installed President to congratulate and thank his immediate predecessor, on behalf of the Members of the Association, for the excellent services he has rendered during his term in the Presidential Chair, and having no desire to be considered an exception to the rule, I have very great pleasure in extending to Captain Scott our appreciation and thanks for the yeoman service he has done in the cause of veterinary science, not forgetting his activities in fostering the social functions during the same period, for which I feel sure we all agree that we owe him a deep debt of gratitude.

I take it that in delivering an Inaugural Address, one of the first duties is to make it short enough to be interesting, and at the same time long enough to cover the subject under consideration, and I feel that the principal subject at the moment concerns the future of the profession.

In accordance with the recommendations of the Cattle Diseases Committee of the Economic Advisory Council, the veterinary practitioner would not be required to undertake any duties in connection with the Milk and Dairies (Consolidation) Act, 1915, or the Tuberculosis Order, 1925, and but for the intervention of the special Committee of the National Veterinary Medical Association appointed to consider such recommendations, and advise thereon, I am very much afraid that the veterinary practitioners would have been in a most undignified position and subordinate to the State Veterinary Officers; so much so, that in due course such a position would become intolerable and unremunerative; the status of a veterinary practitioner would no longer hold out any alluring prospects, consequently the country districts would be depleted of such men, the unqualified man's service would be in great demand, quackery would again be rife, and the slow, but sure, struggle for standing and recognition for which the R.C.V.S. worked so assiduously during the last half century, would be a dismal failure.

Personally, I feel that the practitioners should receive every encouragement, by being appointed to assist in the administration of any scheme which has for its object the elimination, and if possible, the total eradication of diseases which might be conveyed from animal to man, either directly, by means of close association, or indirectly, by means of food provided by the animal kingdom for the use of man; and moreover, I feel that there is no body of men so capable of carrying out these duties as the veterinary practitioners, whose calling brings them into such close daily contact with the habits and diseases of animals under their care.

Very briefly I propose to mention some of the schemes that are already in operation, and others which will be introduced or become operative in the near future, and if you deem them worthy of consideration, I have no doubt that any remark I make will be amplified during such discussion as you feel disposed to promote.

The "Attested Herds" Scheme of the Ministry of Agriculture

This Scheme, to my mind, is so colossal and the conditions under it are so rigorous, as to make it impracticable for any ordinary dairy

farmer to entertain the idea of ever qualifying for a Certificate of Attestation as issued by the Ministry of Agriculture, in order to receive a bonus of one penny per gallon for all milk produced and sold under the provisions of the Milk Marketing Board; even if the producers of Certified and Grade A (t.t.) were eligible to compete, they would, I am afraid, find the levies to which they would become liable very much in excess of any monetary benefit they could hope to receive under such a Scheme.

Grade A (t.t.) Milk as controlled by the Ministry of Health, seems to be finding a few supporters mainly because they are immune from the provisions of the Milk Marketing Board, and I personally feel that the producer has more freedom from other vexatious clauses, inasmuch as he has the option of selecting his own veterinary practitioner to carry out his—tests, and the process of eliminating reactors by half-yearly tests is a practicable measure which must in the long run reduce the incidence of tuberculosis very considerably, as the majority of such reactors controlled by the voluntary producer of Grade A (t.t.) are invariably disposed of for slaughter, although it would be much more satisfactory if all such reactors could be brought within the scope of the Tuberculosis Order.

Grade A producers will, I suppose, be automatically enrolled as Accredited Milk Producers after May 1st next, and will, therefore, receive the penny per gallon bonus on all they produce and sell through the Milk Board.

The difficulty with this Scheme seems to be a question of whether the County Councils will make uniform provision throughout the country for the veterinary inspection of herds free from cost to the producer, or whether the producer must be personally responsible for the payment of such fees.

In Derbyshire, if my information is correct, the procedure seems to be for the producer to select a veterinary surgeon whose name appears on a list supplied by the County Council on making an application for a Grade A licence. On that list I have noticed there is appended the name of a veterinary officer who is paid out of the rates, but is, nevertheless, if requested by a would-be producer of Grade A, permitted to give his services and the statutory fee is charged by and is payable to the County Council. This, to my mind, is unfair competition, and is likely to be the cause of disruption in the ranks of the profession which might resolve itself into a bitter contest between whole-time men and the general practitioner, but so long as the former does not presume to trespass too much on the latter's private practice and has sufficient tact to know when his services are not appreciated, little harm will be done; but if, on the other hand, he persists in forcing his services on an unresponsive client, then the panel system as worked by the sister profession might and could be invaluable to the veterinary practitioner.

We are accused of being an apathetic profession, but in all fairness to the general practitioner, let it be said that his hours, likewise his temper, are very erratic, and that he relies on the R.C.V.S., with whom he is registered to practise the art of veterinary science, to watch over his professional interests.

Students: The "Practical Knowledge" Problem

There is one other matter which I feel ought to receive consideration now that the College curriculum has been extended to five years in order to provide the country with a highly-trained profession possessing post-graduate degrees, and that is the question of students having an opportunity to acquire more practical knowledge; the sessions seem to be so arranged as to preclude the possibility of any student finding adequate time to obtain sufficient experience in the field, the result being a highly-educated graduate with insufficient practical training.

If veterinary practitioners are to maintain their position by making the same progress in practice as in theory, in order to make their services indispensable to the agriculturist, and at the same time fulfil their obligations to the public at large, arrangements should be made by the Colleges to enable students to have a much longer summer vacation, by holding the professional examinations in May instead of July, when I have not the slightest hesitation in saying that there would be ample opportunities for students to acquire practical training which would be of inestimable value to all parties concerned.

If one were to compare the men who graduated from the various colleges 30 years ago with the present-day graduate, I feel that we should be compelled to admit that although science has made such wonderful strides, by means of which we are enabled to make a more definite diagnosis and adopt modern curative and prophylactic measures in combating disease, from an economic point of view the result would be very disappointing; or, in other words: the older generation, on account of the experience acquired by means of strict training in the field, could make a clinical diagnosis as accurately without such aids, and by their wider experience, could advise their clients with little or no hesitation on the most economical methods of securing the end in view.

My own opinion is that unless a system of pupilage is made compulsory, no matter how high the education standard is raised it will be an absolute impossibility to turn out men

who have sufficient assurance to make successful practitioners, but if you are going to absorb them into a State Veterinary Service where personality is no longer an asset, and where they will be more or less guaranteed a minimum salary so long as they are sufficiently disciplined to be controlled by "figure-heads" who themselves may quite conceivably have had insufficient experience in the field, then the question of serving a pupilage would no longer affect their position.

Obviously the only way to avert such an ignominious position would be to give fuller recognition to the general practitioner by absorbing him into the service of the State, and with increased remuneration thus assured, he could and would employ one or more assistants, which would be to the good of the community at large and would ultimately be the means of providing men of ability, of whom, we are told by the Press, there are insufficient to fill the vacancies created by the recommendations of the Economic Advisory Council's Committee on Cattle Diseases.

I have no desire to belittle the whole-time men, who seem to have all the advantages associated with light duties, short hours and an assured monthly income, to say nothing of other advantages, both social and professional, whilst the general practitioner we are told—again by the Press—can earn anything up to £1,500 per annum by serving the agricultural community faithfully and laboriously, with little or no recognition beyond indefinitely postponed payments and innumerable bad debts.

In conclusion, may I once again thank you for the honour you have done me in making me your President. I can only express the hope that the duties of the Office will be carried out to your entire satisfaction, and that our meetings will continue to be interesting and instructive.

Mr. Scott proposed a vote of thanks to the new President for his address and expressed his appreciation of the kind references made to him by Mr. Marrison; also the hope that the President's year of office would be a pleasant one.

This was seconded by Mr. Fletcher and carried with acclamation.

"Attested Herds" Scheme

The President then called on Mr. A. D. J. Brennan, Divisional Inspector of the Ministry of Agriculture, to give the meeting a summary of the "Attested Herds" Scheme.

Mr. Brennan dealt with the two tuberculin test certificates required on application, saying that the Ministry would accept the subcutaneous test if desired. The Ministry would use the intradermal test in the official tests.

The scheme would be of interest to any owner who was anxious to get rid of tuberculosis. It would create work for the veterinary practitioner and, in his opinion, any scheme which did not overlook the part played by the veterinary practitioner should receive the support of the profession as a whole. Mr. Brennan pointed out that some misunderstanding as to the sale of the milk of attested herds had arisen. In the first place, a Certified or Grade A (t.t.) producer was registered by the Milk Marketing Board in England, although the milk need not be sold through the Board. If the milk was sold through the Board a bonus of 1d. per gallon would be paid by the Ministry. The owner might also obtain the bonus as an accredited producer under the Board, together with official testing carried out by the Ministry free of charge. If the milk was not sold through the Board, an owner could still have an attested herd if he carried out the conditions. In this case he would not get the bonus, but the herd would be tested by the Ministry.

Again, if a man had a Certified or Grade A (t.t.) licence, there was some confusion as to whether he would lose these licences under the Milk (Special Designations) Order if he was removed from the list of attested herd owners. So far, he had no information that this would occur.

In regard to isolation of new additions to a herd, the scheme aimed at getting self-supporting herds and the problem of isolation would not be so serious, but in some herds new additions would be necessary and would require isolation for 60 days until a retest was made. The isolation on a small farm would not necessarily require separate attendants so long as the animals were housed and fed separately and the isolation building was capable of being satisfactorily disinfected.

Mr. Brennan was heartily thanked for his remarks, which caused a good discussion. He replied to numerous questions and his replies were much appreciated by all the members present.

"Accredited Milk" Scheme

The President raised the question of the clinical examination of Grade "A" herds to qualify for the accredited list under the Milk Marketing Board. In his area he said the County Veterinary Officer was informing his clients that the County Council was prepared to carry out these examinations. The applicant for a Grade "A" licence could get the County Veterinary Officer to carry out the initial examination provided a fee was paid, and after the licence had been granted these examinations would be carried out at the expense of the County Council.

In the first place, he thought it was wrong for the County Council to enter into competition with veterinary practitioners for the initial

veterinary examination and, secondly, he thought that those Grade "A" herds in which they had hitherto carried out the quarterly examinations should be still under their supervision and fees paid by the County Council to the veterinary practitioners concerned.

Mr. Scott said that in the West Riding the County Council had agreed to employ the veterinary practitioner to examine the Grade "A" herds they had examined in the past, on a fee basis. He had no information as regards the position respecting the initial examination and veterinary surgeon's certificate required to be submitted by the owner on making application.

Mr. Hudson observed that the County Councils' Association had treated the veterinary practitioners very meanly and the N.V.M.A. should tell them so and that if they were not careful the whole-time men would be the only veterinary surgeons left in a district. He submitted that work was being ruthlessly taken away from them which they, as veterinary practitioners, were competent to carry out. Many places were dependent on such work to employ a veterinary surgeon in the district.

Mr. Tweed asked Mr. Hudson, as a matter of interest, how many Grade "A" herds he had been examining.

Mr. Hudson replied that he had examined none so far but felt competent to carry out these examinations and this work was up to now carried out by the veterinary practitioner.

After further discussion it was proposed to send the following resolution to the N.V.M.A.: "That the North Midland Division, having considered the proposals of County Councils to carry out the examination of herds under Grade 'A' licence free of charge by their whole-time veterinary staffs, urge the Council of the N.V.M.A. to recommend to the proper authorities that the veterinary practitioner be employed on a fee basis by County Councils to carry out these examinations in view of their services being required in the past for this work."

The President asked for the authority of the Division to write the Clerk of the County Council in his area and other interested persons on the matter and the necessary authority was given.

. . . . . .

Following is the text of the President's letter and of the communication from Mr. Lloyd George to *The Pharmaceutical Journal* to which reference is made therein:—

Granby Croft,
Bakewell.
May 8th, 1935.

Dear Sir,

I beg to refer to the question of the appointment of full-time veterinary inspectors by the Derbyshire County Council for the purpose of examining herds licensed for the production of Grade "A" milk, and to request your consideration of the following points.

1. The veterinary practitioners of Derbyshire realise the need for adjustments to meet the exigencies of the situation, and yield to no one in their desire to see the public health adequately safeguarded.

2. It appears to be a well-grounded principle in British administration that where legislative changes compel citizens to seek the services of professional men, the principle of free choice should be adhered to, and that new legislation should not inflict unnecessary hardship on professional men whose duties are affected by the change.

The National Insurance System which was set up in 1911 affords a striking example of this. Mr. Lloyd George saw the fairness and the wisdom of arranging that the medical duties of that scheme should be performed by general practitioners rather than by men specially appointed for the work. He also decided against the appointment of special dispensers to compound the medicine and made arrangements for the work to be done by the ordinary pharmacist in retail business. The attached copy of a letter from Mr. Lloyd George to *The Pharmaceutical Journal*, dated April 11th, 1935, bears witness to the success attending his action in laying these highly responsible duties on the practising retail pharmacist.

3. The County Council in considering the appointments in question were faced by three possible situations.

(*a*) The existing facilities for examining herds in the County were satisfactory and adequate.

or (*b*) These facilities were satisfactory so far as they went, but were inadequate for the purpose in view.

or (*c*) These facilities were unsatisfactory and inadequate, which means that the veterinary surgeons were either negligent or inefficient or both.

In the first case the question would not have arisen, in the second case, the proper and natural course would be to ask the veterinary practitioners to assist in providing a perfect service, which they would gladly have done; as, however, the Council have decided against this course it would appear that they consider that the practitioners of the County, in spite of their academic qualification and their accumulated experience, not to mention their years of loyal service in the interests of public health, are unsuitable for carrying out their professional duties.

4. As President of the North Midland Veterinary Medical Association, it is my duty to request the Derbyshire County Council to state plainly the grounds on which they have decided to inflict this injustice on my colleagues.

Yours faithfully,
(Sgd.) E. Marrison.

H. Wilfrid Skinner, Esq.,
Clerk of the County Council,
County Offices,
St. Mary's Gate,
Derby.

. . . . . .

Thames House,
Millbank, S.W.1.
April 11th, 1935.

One of the first objects of any wise public policy must be to maintain and raise the standard of national health. The system of National Health Insurance which I set up in 1911 was designed to promote this object, and the splendid work which has been carried on under the

scheme and the valuable results achieved, bear witness to the loyalty, diligence and skill of all those who have had to bear the responsibility for its actual administration.

I am glad to take this opportunity of paying tribute to the pharmacists of Britain for the fine part they have played in carrying out this task. Highly responsible duties were laid upon them. As a body they have rallied splendidly to the call, and the nation owes them warm praise and gratitude for the vital service they have rendered.

I would add a special word of grateful recognition for the valuable assistance rendered to me in the framing of the National Insurance Act by the late Mr. (afterwards Sir William) Glyn-Jones, M.P., who represented the Pharmaceutical Society in the negotiations which took place at that time.

It was mainly due to him that the decision was reached to place dispensing under the Act in the hands of pharmacists, and the manner in which they have for nearly a quarter of a century discharged this responsibility has abundantly justified the wisdom of the arrangement.

(Sgd.) D. Lloyd George.

The Editor,
The Pharmaceutical Journal,
23, Bloomsbury Square, W.C.1.

A vote of thanks to the President completed the business of the meeting.

Wm. Tweed, *Hon. Secretary.*

YORKSHIRE VETERINARY MEDICAL SOCIETY*

MEETING AT LEEDS

A general meeting of this Division was held at the Hotel Metropole, Leeds, on Friday, April 26th, 1935, when the President, Mr. A. H. Watson, occupied the chair. The following members were present: Messrs. E. Ackroyd, H. W. Brekke, Lieut.-Colonel H. G. Bowes, Mr. W. A. Campbell, Lieut.-Colonel J. A. Dixon, Messrs. E. G. Duncan, G. W. Davidson, W. Halstead, J. W. Procter, D. S. Rabagliati, F. C. Scott, S. B. Vine, G. Whitehead and E. F. McCleery, Hon. Secretary. There were present as visitors: Messrs. J. O. Powley, G. D. Coward, A. D. J. Brennan, W. Petrie, H. M. Salusbury, A. Cruickshank, D. V. Sinclair, A. H. Gentle and Major C. Holland. The receipt of apologies for inability to attend was intimated from Messrs. W. R. McKinna, Noel Pillers, McGregor, McKellar, A. McCarmack and Dr. Bradley.

Obituary.—The President mentioned the loss the Society had sustained by the death of Mr. E. Collins who had been a member of the Division for very many years. Mr. Watson paid a tribute to the memory of the deceased, the members standing for a few moments.

Illness of Mr. G. E. Bowman.—The President then mentioned the serious illness of Mr. G. E. Bowman, a past president of the Division. He was, however, very glad to be able to state that Mr. Bowman's condition was improving. The members expressed their regret at the news of Mr. Bowman's illness and instructed the Secretary to write to him and express the sincerest wishes of the Society for a very speedy recovery.

Elections and Nominations.—On the proposition of Major D. S. Rabagliati, seconded by Colonel Bowes, Mr. A. Cruickshank, M.R.C.V.S., Skipton, and Mr. D. V. Sinclair, M.R.C.V.S., Boston Spa, were elected as members of the Division, and the following gentlemen were nominated for membership: Messrs. A. D. J. Brennan, H. M. Salusbury, A. Robertson, J. Sheffield, and Major C. Holland.

Correspondence.—Following the adoption of the minutes of the last meeting, the Secretary submitted a letter from the General Secretary of the N.V.M.A., regarding the institution of a composite subscription to cover membership of the N.V.M.A. and its Divisions. After discussion the following resolution, proposed by Major D. S. Rabagliati, and seconded by Colonel Dixon, was passed: "That this Division is in agreement with the principle, but is of opinion that if such a scheme is worked out it should be submitted to the various Divisions for their consideration before being finally accepted by the Council of the N.V.M.A."

Representatives on N.V.M.A. Council.—On the proposition of Colonel Bowes, seconded by Mr. G. W. Davidson, Colonel J. A. Dixon, Major D. S. Rabagliati and Mr. W. R. McKinna were elected as the representatives of the Division on the N.V.M.A. Council.

R.C.V.S. Council Election.—It was decided that, as in previous years, the Lancashire and Yorkshire Divisions would support mutual candidates in the above election.

The Secretary submitted a letter from the General Secretary of the N.V.M.A. regarding the setting up of a "National" scale of fees for the examination of Grade "A" herds under the Accredited Producers' Scheme and, on the proposition of Mr. W. Halstead, seconded by Mr. E. Ackroyd, it was decided to refer the matter to the Council of the Division with power to act.

The Secretary read a letter from the General Secretary of the N.V.M.A. regarding correspondence between that body and the Agricultural Research Council with reference to an investigation into braxy-like diseases in sheep, and, on the proposition of Colonel Bowes, seconded from the Chair, it was agreed that the members should give their full support to the investigations mentioned.

The Secretary submitted a further letter from the General Secretary of the N.V.M.A. with reference to the revised instructions issued to Veterinary Investigation Officers and, in

* Received for publication, May 10th, 1935.

view of the fact that all details of this matter were to be published in *The Veterinary Record*, it was proposed by the President, seconded by Major Rabagliati and passed that the matter be left over until the next meeting for consideration.

R.C.V.S. Library Endowment Fund.—The Secretary read letters regarding this matter from the Secretary of the R.C.V.S. and the General Secretary of the N.V.M.A. and on the proposition of Colonel Bowes, seconded by the President, it was decided to forward a further donation of two guineas to the fund in question and to consider the matter again at a later date.

"Attested Herds" Scheme

The President now called upon Mr. J. O. Powley to open a discussion on the "Attested Herds" Scheme of the Ministry of Agriculture and Fisheries. Mr. Powley explained the objects and details of this scheme and a discussion ensued on the various aspects of the scheme, the following members taking part: Colonel J. A. Dixon, Major Rabagliati and Messrs. Procter and Halstead. Mr. Powley suitably replied to the various questions raised and amongst the interesting facts brought forward were that the Ministry's Officers would use the double intradermal test in the examination of herds applying to become "Attested," but that the Ministry would accept the subcutaneous test. Mr. Powley further pointed out that legally all milk producers should be registered with the Milk Marketing Board including Certified and Grade "A" (t.t.) producers, who are exempted from the provisions of that Board's scheme, and also that only registration of milk producers was essential: it was not necessary for such producers to sell any milk.

Dietetics in Pigs.—Mr. Powley then gave some very interesting facts on dietetics in pigs, and explained the latest findings and recommendations of prominent biochemists after investigation of cases where extensive losses were being sustained by pig breeders. A very interesting discussion took place, several members giving their experiences of death and unthriftiness amongst pigs. Contributors to this discussion included Messrs. Campbell, Procter and Scott.

The President now proposed a very hearty vote of thanks to Mr. Powley for his attendance at the meeting and for the very interesting and instructive discussions which he had evoked. The proposition was seconded by Major Rabagliati and passed with acclamation.

Mr. J. W. Procter then spoke to a resolution appearing on the Agenda in his name, regarding the appearance in *The Veterinary Record* of certain advertisements. The matter was thoroughly discussed and the following resolution, proposed by Mr. J. W. Procter and seconded by Mr. W. A. Campbell was passed unanimously: "That the appropriate committee of the N.V.M.A. be asked seriously to consider the non-acceptance of advertisements from firms which supply the laity, particularly with biological and bacteriological products."

The Secretary then submitted a resolution regarding the use of the abbreviation "Vet." by certain people when referring to veterinary surgeons in the Press or by public announcement. He pointed out that the use of this objectionable title would appear to have become more general and, after discussion on the point, the following resolution, proposed by the Secretary and seconded by Mr. F. C. Scott, was passed: "That the appropriate committee of the N.V.M.A. be urged to take all possible steps to ensure that the abbreviation "Vet." is not used by members of the public when referring to members of the veterinary profession in the Press or by public announcement and that such members be referred to by the proper title of "Veterinary Surgeon."

E. F. McCleery, *Hon. Secretary.*

In Parliament

Foot-and-Mouth Disease: Motion in the Lords

In the House of Lords on Tuesday of last week, Lord Strachie moved that in view of the recent serious outbreak of foot-and-mouth disease in Dorset it was desirable that the Minister of Agriculture should have power to prohibit the introduction of hay and straw or other imports into Great Britain from countries where foot-and-mouth disease was known to exist.

He said that recent outbreaks had cost the country £70,000 for the slaughter of 5,418 animals. Some benefit might be obtained if the Ministry of Agriculture adopted the practice of the United States of America and Canada, where it was required that hay and straw used for the packing of imported articles must be certified as having been disinfected before use.

If the infection was brought into this country by imported hay and straw, something might be done to stop it by having more stringent regulations regarding the use of hay and straw for packing purposes. In the United States of America and Canada there was no foot-and-mouth disease, and he did not see why this country should not be equally successful in keeping it out. In the West of England feeling was very high that something more should be done to prevent these outbreaks, which did so much damage and caused so much disability.

Earl de la Warr, Parliamentary Secretary to the Ministry of Agriculture, replying, said that Lord Strachie had not exaggerated the cost of this disease. But if the figures in this country were compared with those on the Continent it would be realised that the incidence of foot-and-mouth disease here was extraordinarily slight. It was almost certain that the main reason why the disease spread in Dorset was the lateness in notification. The Ministry were taking active proceedings to deal with that matter.

The noble earl described the precautions taken in respect of live animals, carcases, feeding-stuffs, hay and straw, and other packing material.

With regard to hay and straw, he agreed that there was difficulty in checking the Order that it should be burnt, and said that he would look into the matter. Within the last ten years there had been only three cases in which it was even suggested that hay and straw might have been implicated, and in every one of those cases they had been unable to establish any proof that it was so. In the same period there were only five cases in which vegetables and fruit were suspected. Here, again, no proof could be established.

The old suggestion had been made that the disease might come over with migratory birds. That had been thoroughly investigated. There was no regular correspondence of initial outbreaks with the migratory season. They would certainly expect Scotland and Ireland to be particularly susceptible if this were the case. It was frequently suggested that the wrapping material for meat might be responsible. In 1932 the Government laid it down that the wrappers should be striped with red and should not be allowed to come into contact with animals, and that they should either be destroyed or sterilised.

The fact probably was that with regard to all these outbreaks there was a great variety of causes, but never had it been possible to trace infection to any one source. A foot-and-mouth disease research committee under the chairmanship of Dr. Arkwright had been examining the question. They had been particularly studying immunity, and it was hoped that they would shortly issue an interim report on the question of the source of the disease. If anything transpired from that investigation the Government would not be slow to take up any suggestions and put them into force.

The motion was, by leave, withdrawn.

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The following questions and answers have been recorded in the House of Commons recently:—

Poisons and Pharmacy Bill

Mr. Hall-Caine asked the Home Secretary what progress has been made with the drawing up of a new list of poisons under the Poisons and Pharmacy Act of 1933; and by what date it is anticipated this new list will be available?

Sir J. Gilmour: I am informed that the Poisons Board has prepared the Poisons List and is about to submit it to me, together with its recommendations in regard to the rules to be made under the Act. It is hoped that the proposals of the Board will be available to Members before the Whitsun Recess.

Mr. Burnett: Will the right hon. Gentleman consider the inclusion of methylated spirits in the new list of poisons?

The County Councils' Association have advised their members that it is undesirable to stipulate any fixed standards of cow-shed construction for the purpose of issuing Grade "A" licences. The Association attach primary importance to the cleanliness of premises and hygienic methods of production, and do not consider that producers should be required to incur expenditure on unnecessarily elaborate alterations. Such difficulties as may arise can best be overcome, they state, by co-operation between the county veterinary officers and the rural sanitary inspectors.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

June 6th.—R.C.V.S. Annual General Meeting, 12 noon; Luncheon, 1.15 p.m. Annual General Meeting, Victoria Veterinary Benevolent Fund, 12.45 p.m.

June 6th.—Meeting of the Central Division, N.V.M.A., at the Museum, Royal College of Surgeons, 6.30 p.m.

June 6th.—Annual Meeting of the South Wales Division, N.V.M.A., at Aberystwyth, 2.30 p.m.

June 7th.—Meeting of the N.V.M.A. Advisory Committee on Poultry Diseases, 2, Verulam Buildings, Gray's Inn, W.C.1, 2 p.m.

June 7th.—Meeting of N.V.M.A. Committee on Fur-Bearing Animals, etc., 2, Verulam Buildings, Gray's Inn, W.C.1, 4 p.m.

June 12th.—Meeting of the Lincolnshire and District Division, N.V.M.A., at Peterborough.

June 13th.—D.V.S.M. Examination begins, Edinburgh.

June 14th.—Fees due for July Examinations, R.C.V.S.

June 14th.—R.A.V.C. Annual Dinner, Hotel Victoria, 8 p.m.

June 17th.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, at 4 p.m.

June 26th.—R.C.V.S. Committee Meetings.

June 27th.—R.C.V.S. Committee Meetings.

June 28th.—R.C.V.S. Committee and Council Meetings.

June 30th.—Final date for payment of Annual Fees to R.C.V.S.

July 1st.—R.C.V.S. Diploma Examinations begin.

July 29th—August 2nd: N.V.M.A. Congress at Belfast.

August 24th.—Last date for entries for Jubilee Memorial Prize Examination.

Sept. 24th to 25th.—Jubilee Memorial Prize Examination.

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R.C.V.S. ANNUAL LUNCHEON

Those readers who have not yet applied for tickets for the Luncheon to be held at the Connaught Rooms, Kingsway, after the Annual Meeting on Thursday next, should send in their application AT ONCE to the Secretary, R.C.V.S., 10, Red Lion Square, W.C.1. The price of the luncheon is 6s. 6d., and the hour 1.15 for 1.30.

We hope that there will be a large gathering

of members to support the President and to do honour to the number of eminent gentlemen who have accepted invitations to be present.

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PERSONAL

Award of Silver Jubilee Medals.—Among members of the profession recently honoured by His Majesty by the award of the Silver Jubilee Medal were: Captain H. A. Idenden, M.R.C.V.S., Senior Veterinary Officer Trans-Jordan Frontier Force; Major J. M. Smith, O.B.E., M.R.C.V.S., and Major S. J. Gilbert, M.R.C.V.S., respectively Chief and Senior Veterinary Officers of the Department of Agriculture, Palestine.

On Leave.—Captain H. A. Idenden, Senior Veterinary Officer to the Trans-Jordan Frontier Force, arrived in England on May 31st, on a month's leave.

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ARMY VETERINARY SERVICE

Movements of Officers

Lieut.-Colonel J. J. M. Soutar, O.B.E., Captains L. H. B. Poer, M.C., and R. K. Kent, are at present in this country on leave *ex* India.

Lieut. R. H. Duff proceeds from Edinburgh to Aldershot for duty, on the return of Captain I. D. Macrae to Edinburgh.

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R.C.V.S. OBITUARY

Ross, James Gordon, The Rise, Walton, near Wakefield, Yorks. Graduated Edinburgh, July 15th, 1921. Died May 26th, 1935; aged 41 years.

Watson, Edward M., Killyleagh Street, Crossgar, Co. Down. Graduated Edinburgh, July 18th, 1887; died February 6th, 1935, aged 75 years.

The Late Mr. J. G. Ross, M.R.C.V.S.

Mr. J. G. Ross, M.R.C.V.S., whose death we announce above with much regret, qualified at the "Dick" College, Edinburgh, in 1921 and after serving assistantships in different parts of the country took over the practice of the late Mr. W. G. M. Braes of Linlithgow. In 1927 he gave up this practice and was appointed on the staff of the West Riding County Council, on which he served until the end of 1932, when he was obliged to retire on account of ill-health after undergoing a serious operation.

In 1933, Mr. Ross started practice for himself in Wakefield and was most successfully building up a good connection when he was again struck down by illness from which he finally succumbed. A man of most genial disposition, Mr. Ross will be missed by a large number of friends. He leaves a widow, the daughter of the late Mr. Braes, and one son, for whom deep sympathy is felt.

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FOOT-AND-MOUTH DISEASE: ALLEGED FAILURE TO NOTIFY

At Sturminster Newton (Dorset) on Thursday of last week John Mitchell and James Mitchell, of Manor Farm, Shroton, farmers, were summoned on charges alleging that they failed to notify a suspected case of foot-and-mouth disease, conveyed suspected animals on the highway, and exposed them. Mr. H. J. Kemp, of the Ministry of Agriculture, prosecuted, and Mr. Rowland Thomas, K.C., and Mr. J. L. Pratt were for the defendants, who pleaded "Not Guilty" to all the charges. Veterinary surgeons, police, and Ministry officials gave evidence that the symptoms of foot-and-mouth disease were pronounced. In his evidence, John Mitchell said he had never seen a case of foot-and-mouth disease and had every confidence in the unqualified practitioner he employed, who said it was nothing serious. He had no suspicion that the animals were suffering from foot-and-mouth disease. The hearing was adjourned until June 1st.

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GRADE "A" LICENCE HOLDER COUNCILLORS

A ruling of importance was given by the Chairman at a recent meeting of the Staffordshire C.C., when a recommendation was submitted regarding Grade "A" licences.

When Mr. H. B. Boden, a farmer, rose to support an amendment, Alderman G. Townsend asked for a ruling as to whether he (Mr. Boden) was in order in speaking.

The Chairman: Mr. Boden is in order if he chooses to run the risk of a fine of £50. No-one holding a Grade "A" licence is entitled to speak or vote.

Alderman Patterson: This raises an important matter, and, so far as I can see, it will reduce the proceedings of this Council to a farce. I cannot conceive any question being raised in which certain members of the Council are not concerned.

The Chairman said he had instructed the clerk to take counsel's opinion, and the reply was that a holder of, or an applicant for, a Grade "A" licence was, in his opinion, pecuniarily interested in the matter, and was, therefore, debarred from taking part in discussions or voting.

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HUNTERS' IMPROVEMENT SOCIETY

The Duke of Gloucester presided at the council meeting of the Hunters' Improvement and National Light Horse Breeding Society at 12, Hanover Square, London, recently, when he was installed as president for the ensuing year. Twenty-four candidates were elected to membership, and Major H. C. Meredith was elected a steward of the London Show in place of Major J. L. Nickisson, M.F.H. (retiring). The council expressed to Major Nickisson their thanks for the invaluable services he had rendered to the society, having acted as a steward since 1906. Major Nickisson was elected a member of the council. It was decided to invite the Racecourse Betting Control Board to nominate a member to fill the vacant seat on the council. The financial statement in respect of the recent Thoroughbred and Hunter Show showed that the cost was £695 12s. 6d., the total expenditure being £11,928. It was resolved that, provided the grants were forthcoming, the scheme of special premiums for young stallions should remain in existence for next year. Major H. Denison Pender reported that in respect of the veterinary examination of the hunter classes, 137 hunters were examined, of which 133 were passed as sound. It was reported that Volume 14 of the Hunter Stud Book will be issued at the end of the year, and entries are now being received.

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BIRMINGHAM HORSE PARADE

The Birmingham Mail records that on the afternoon of May 18th, a parade of Birmingham's finest working horses through the main streets of the city made a splendid spectacle, and was a worthy outcome of the aim of its originator, Mr. Brennan DeVine, the Chief Veterinary Officer to the Corporation.

Twelve months ago Mr. DeVine thought of such a parade as being a stimulus to those who, in their daily work, had to look after the horse.

His idea received the support of horse-owners representing the various trades, the Corporation departments, the railway companies, Co-operative societies, brewery companies, corn trades associations, and so on.

It was decided to make the parade an annual fixture, as it created the impetus for competition and demonstrated that in a petrol-ridden age the horse was still a good servant as well as a friend to those in city industry.

Before the procession, in which some 250 fine animals took part, Sir Frederick Smith, president of the parade, occupied the chair at a luncheon at the Midland Hotel. Sir Frederick congratulated Mr. DeVine, and expressed great appreciation of the action of the many outstanding men who had come long distances to act as judges—among them Major-General Sir John Moore. Sir Frederick also expressed the belief that Birmingham working horses were equal to any in the country.

There was a large gathering to watch the judging of competitions for clean horses, good turnouts, etc., in Calthorpe Park, and the procession, about a mile long and including a series of effective tableaux, went on its way, headed by the mounted police and with a detachment of the Legion of Frontiersmen (Harborne Squadron) as mounted stewards.

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NATIONAL PONY SOCIETY

At a Council Meeting of the National Pony Society held on May 24th, Mr. F. H. Unwin was installed as President of the Society with Mr. Herbert Bright as President-elect. Eighteen candidates were elected members of the Society.

The Secretary reported that the War Office had now approved of the various stallions selected for mountain and moorland pony premiums and these were now on the various routes.

The report of the Show Committee indicated that the recent London Show had been very successful, resulting in a total cost of £43 11s. over receipts. Complaints had been received as to exhibitors bringing ponies to the Show that were coughing, and it was agreed to add a warning in the schedule that ponies that are coughing are liable to be turned out of the Show if the veterinary surgeon certifies that the animal is suffering from any malady of an infectious nature.

Letters had also been received asking that a clause should be inserted that all Shetland ponies should be shown unclipped, and that the Shetland Miniature classes should be discontinued. It was resolved to ask for the views of the Shetland Pony Stud-Book Society on these points.

It was reported that the Secretary had been in communication with the Royal Show as to the rule insisting that all two-year-old colts should be licensed, and had suggested that the concession should be granted that exhibitors should give a certificate that these two-year-old colts were not being travelled during the year with a view to service, thus saving exhibitors much trouble and expense in getting their two-year-old colts licensed. The Royal Society had intimated that the question would be considered at their meeting in the autumn of this year, so that they may consider the whole policy with regard to future shows.

The suggestion was also made that the Society should hold in the autumn, a sale of young untried ponies, warranted unplayed, and two members of the Council were deputed to go into the matter.

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

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EAST COAST FEVER

To the Editor of The Veterinary Record

Sir,—In his communication to your correspondence columns, which was printed in your issue of March 2nd, 1935, Mr. Purvis presents an unconvincing argument against the theory that animals recovered from East Coast fever are permanently immune. The work which he describes as taking place at Kabete, in 1926, merely proves that one attack of East Coast fever does not confer immunity. We do not claim that one attack confers immunity, but a series of attacks in calfhood will build up a durable immunity. That such series of attacks do occur I know from my experience in an East Coast fever enzöotic area. Mr. Purvis states: "I have never seen adult native oxen and cows, said to have come from enzöotic areas, die from East Coast fever after spending some years in clean areas." "Said to have come" is not scientific evidence and it must be remembered that the disease can be extremely localised in districts where it exists. The oxen and cows referred to may have been susceptible.

Mr. Purvis makes a very contradictory statement when discussing dipping in tick-infested enzöotic areas. He says that the first results of dipping in such areas will be "inappreciable, as sufficient ticks survive to keep up the immunity of the cattle" and he goes on to show that with 100 per cent. effective dipping as practised on European farms in Kenya, a state is reached where every tick is infective and every animal susceptible, with consequential high mortality. Mr. Purvis proceeds: "If this was the case on European farms, after years of work, where 100 per cent. of the cattle could be dipped every time in properly prepared dips, it can be imagined how much *worse* results will be in native areas with evasion by the owners and the difficulties of supervision of dip preparation at scattered dipping tanks." One cannot reconcile the word "worse" with the previous statement that the results of dipping are inappreciable when sufficient ticks survive to keep up the immunity of the cattle. The conditions described, *i.e.*, evasion by owners and dips sometimes understrength, are ideal conditions for the survival of sufficient ticks to keep up the immunity of the cattle.

Mr. Purvis queries the Tanganyika report where it states that the calf mortality in enzoötic East Coast fever is as high as 50 per cent. In my opinion the report is too optimistic and might well read 70 per cent. I am in charge of the worst enzoötic area in Tanganyika—possibly the worst in East Africa—and I have had ample opportunity of collecting data on this particular point. Last year we lost five out of ten calves on the Government farm from East Coast fever, and as two calves died from other causes in the first few days of their lives, the mortality might well have been 70 per cent. in this instance. The only two European farmers in my district who are courageous enough to keep cattle put their loss at 80 per cent. of calves.

I agree with Mr. Purvis when he says that too much attention has been paid in East Africa to the results in South Africa of East Coast fever eradication by dipping. I do not believe that dipping will ever eradicate the disease in mountain grassland country such as this where the annual rainfall approaches 90 inches a year and where the tick infestation of cattle is really appalling. There are four dipping tanks in my district and three of them are situated in the belt of heavy rainfall. The attitude to dipping of the native stockowners served by these three dips is hostile, not because they think the dipping is harmful but because they cannot see results commensurate with their trouble. Actually these dips do good by keeping the ticks down to reasonable proportions and giving the cattle some escape from the continual irritation and blood sucking. A dipped herd looks better, and thrives better than an undipped one, and I should like to see more dips in this district, but I am convinced that they would make little difference to the incidence of East Coast fever. It is significant that at the fourth tank, which is situated in the south of my district where the rainfall amounts to only 40 inches per annum, dipping is popular, and the Chief—who is a keen stockman—assures me that the calf mortality has definitely decreased since systematic weekly dipping was introduced.

Yours faithfully,

G. S. Cowin, M.R.C.V.S.

Veterinary Department, Bukoba,
Tanganyika Territory.
April 26th, 1935.

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"TUBERCULOSIS OF THE HIP-JOINT IN A CAIRN TERRIER"

To the Editor of The Veterinary Record

Sir,—I must ask for your indulgence to give a final reply to Mr. Barrett. In his first communication on this article, in your issue of May 4th, he stated that "there are one or two points that puzzle me," and proceeded to ask five questions. He now states that my replies in your issue of May 11th are not satisfactory. Very well:—

(1) I am afraid that I cannot assist Mr. Barrett for any lack of observation, but if he is going to pin his faith to the presence or absence of pain in arriving at the seat of lameness he will get a fall sooner or later. He further disputes that pain may be absent even in recent cases involving fracture of the head of the femur. Perhaps he has never encountered an impacted fracture not only in the dog, but in a patient that can speak, *i.e.*, man. If, as he asserts, "many professional gentlemen with an extensive experience of canine practice" will not agree with this statement, it will not alter my view, as not a few of such cases have come on to me, after being erroneously diagnosed by such gentlemen, and X-ray has shown the lesion alluded to.

(2) This question has been answered, and I can only add that I cannot aid Mr. Barrett further, beyond stating that the presence of the abnormality was discovered by a very junior member of the profession, *before any X-ray*, and subsequent conflict by members of repute "and extensive experience of canine practice."

(3) The tuberculin test was applied prior to receiving the communication from Mr. Noel Pillers.

(4) It has already been indicated to Mr. Barrett how he can obtain the radiograms for his own inspection, or for that of members of his Division. I must plead guilty to some slight knowledge of the correct procedure in such cases, and I am most certainly not going to write to the Secretary of a Division of which I am neither a member nor a visitor.

(5) The electrical treatment was given *before* the X-ray examination. I am sure that members not only of the veterinary profession, but also of the medical, will be interested to read Mr. Barrett's assertion in his letter of May 4th, that it would have had no influence on the condition even if it had been traumatic!

Short of sending him the dog, I fail to see how the original article can be enlarged upon. I notice that an actual case of tuberculosis in a fox terrier and a radiograph appears in your issue of May 25th by Messrs. Eichholtz and Ernst, and I would suggest to Mr. Barrett, if he is still dissatisfied with my replies, to write to them. Before doing so, it would be also of interest for him to compare this radiograph with that of an actual case of Von Perthe in the human subject and which he will find on page 830, plate 164, of the third edition of Choyce and Beattie's "System of Surgery," Volume 3. He will then perhaps realise how gentlemen with extensive experience of canine practice differed in their opinion about my case when they saw the radiographs, and still further why they may disagree with my reply to his first question.

Yours faithfully,

J. F. D. Tutt, F.R.C.V.S.

Winchester.
May 27th, 1935.

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GRUNTING IN HORSES

To the Editor of The Veterinary Record

Sir,—I should like to make a few further remarks about Mr. Wall's letter and also to refer to the discussion at the Central Veterinary Society meeting, reported in this week's issue.

First, concerning Mr. Wall's letter. My question as to grunting being peculiar to the male sex was really a statement of fact—in my opinion. Mr. Wall states that, in the male, it might be due to fear of injury to the genital organs! Surely one does not approach the female in the region of the genital organs? Again, he states: "It has been my lot to examine many thousands of horses and mules where it is not customary to grunt them during examination, and in that experience I cannot recall a single instance where a grunter was not definitely unsound in the wind." How are we to interpret this?

In the discussion at the meeting of the Central Veterinary Society, Professor Macqueen says, at first, that if grunting were an unsoundness he must have committed many errors, ending up by saying: "grunting is an unsoundness." I respect the opinion of Professor Macqueen at all times, but, though a Scotsman, he is often an Irishman in argument—for he is "Agin everything"! No-one taking part in that discussion mentioned anything about the pathology, if any, of grunting—and that is what I am after. Mr. Hicks, very aptly, describes the grunt with a "tail". If that tail is present there is another "tale"—for the subject will be rejected for something far more serious than a grunt!

In spite of the various opinions, most of them inconsistent, I shall carry on as I have always done. I shall put the subject before the load or under the load: if the wind is clear and pulse good (and this is very important) I shall advise purchase, leaving the grunt to look after itself.

Just a final word. When testing for wind, I personally supervise the adjustment of any harness, and never allow the throat lash to be a "throat lash"! After all, the animal is entitled to a square deal.

Yours faithfully,

J. P. Railton.

The White House,
Kington,
Herefordshire.
May 26th, 1935.

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WHY "HEIGHT OF APPLICANT"?

To the Editor of The Veterinary Record

Sir,—May I venture on your space to reply to Mr. John Smith of the "Dick"? After his appealing letter of last week I feel I would like to set his mind at rest.

He has made the great mistake (usually associated with an inferiority complex) of assuming all sorts of things antagonistic to himself.

When height is asked for in an advertisement it does not necessarily mean that only tall persons need apply. Let us consider the part height may play in the life of a practitioner. It is conceivable that in pig practice, where the pigs are kept in singularly small houses, a small man may feel more comfortable than a tall one, for I hasten to ensure him that rapid movement in a pig-sty when one has assumed the position of a question mark is neither safe nor comfortable!

Then, although a tall man may find advantage in long arms when calving a cow—what is this compared with the potential ability of a small man to climb inside and push?

Again, in country practice many of one's clients live in old-fashioned farmhouses or cottages with very low ceilings and in a tall man the constant assumption of an attitude of subdued reverence, tends to produce not only lack of confidence but a sense of loss of dignity.

Here then are some advantages in being short and I will close by wishing Mr. Smith the best of luck in his examinations, for, short or tall, we all need it.

Yours faithfully,

N. R. Turnbull.

Students' Union Society,
Royal Veterinary College,
London, N.W.1. *May 25th,* 1935.

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To the Editor of The Veterinary Record

Sir,—Mr. John Smith, in his letter of May 20th, infers that tall graduates are sought by members whose advertisements he has in mind—but is such the case? I offer the following surmise:—

Veterinary surgeons of small stature are in demand by

(*a*) Members with a pit-pony practice.

(*b*) Nervous members who haven't been taught to box.

(*c*) Members living in modern houses and utilising baby cars.

(*d*) Members in hilly districts where shire horse-breeding is carried on. In such practices, dystocia is of frequent occurrence and a pocket obstetrician has a great advantage over your Samson, in that he can, if required, visit the seat of trouble in person and use both arms at the same time for correcting an extra difficult mal-presentation.

No graduate need despair. Once when in search of a job I was asked my *weight.* Replying, I said, Sir, you've hit on my trouble—I'm too light for heavy work and too heavy for light work, yet here I am to-day taking bulls by the horns, and such other jobs as come the practitioner's way.

Don't worry, Mr. Smith, remember Lord Roberts and quote Kipling to your proposed employers.

"'E's little but 'e's wise,
'E's a terror for 'is size."

You'll get there all right.

Yours, etc.,

4, St. Mary's Road, N. F. Pollock.
Cromer, Norfolk. *May 28th,* 1935.

[This correspondence is now closed.—*Editor.*]

Diseases of Animals Acts

SUMMARY OF RETURNS

Period.	Anthrax.		Foot-and-Mouth Disease.		Parasitic§ Mange.		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks reported by the Local Authorities.	Animals attacked.	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Period 1st to 15th May, 1935	14	15	2	1,242	3	5	4	85	53
Corresponding period in									
1934	16	19	1	62	3	4	4	65	38
1933	13	13	—	—	4	4	9	114	70
1932	18	22	—	131	1	2	8	91	46
Total 1st January to 15th May, 1935	167	183	32	10,109	62	93	175	663	312
Corresponding period in									
1934	185	195	2	93	78	126	315	583	324
1933	143	163	54	5,161	89	162	188	544	266
1932	181	232	3	358	66	117	125	813	377

Note.—The figures for the current year are approximate only.

§ Excluding outbreaks in Army Horses.